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Contents Page

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Disclosure of Interest

The authors report no conflict of interest.

The Association between Quality of Social Support and Symptom Severity in Individuals with Psychosis: A Systematic Review

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Abstract

To systematically review the research exploring the association between quality of social support and symptom severity in individuals with psychosis, a literature search was conducted on three databases (PsychINFO, Web of Science and PubMed). A narrative synthesis of twelve studies that met the inclusion criteria was conducted. Results of the review indicated relatively consistent findings, with greater symptom severity associated with lower quality of social support. The possible mechanisms underlying these findings are explored, including a hypothesis that social support is a protective factor that promotes resilience. The limitations of the review and clinical implications of findings are outlined with possible directions for future research suggested.

Key Words: Psychosis, Social Support, Symptom Severity

Word Count: 5965

The Association between Quality of Social Support and Symptom Severity in Individuals with Psychosis: A Systematic Review

Introduction

Psychosis is categorised as a severe and debilitating mental disorder (Kirkbride et al, 2012), however this classification carries no implications about recovery. Indeed Hopper, Harrison, Janca and Sartorius (2007) demonstrated that a majority of individuals with psychosis can, and do, achieve either full or partial recovery. Such research has helped pave the way for an attitudinal shift from questioning whether it is truly possible to recover from a severe and enduring mental illness like psychosis, to seeking to identify those interventions and factors that in actuality facilitate recovery in individuals with psychosis (Onken, Ridgway, Dornan & Ralph, 2002). The course of recovery has been found to be determined by the quality of an individual's social support; with, for instance, Norman, Malla, Manchanda, Harricharan, Takhar & Northcott, (2005) finding that among first-episode psychosis patients, three years post-diagnosis, those individuals with higher levels of social support correlated with lower levels of positive symptoms of psychosis. Symptom severity is clearly one determinant of recovery in psychosis.

Social support is seen as an essential component of the mental health recovery paradigm for individuals with a serious mental illness. Supportive relationships that provide emotional support have been identified as a key component of the recovery model for mental health (U.S. Department of Health and Human Services, 2014; Walsh & Connelly, 1996). Furthermore, the World Health Organisation has recognised social support as a critical contributor to both physical and mental health (WHO, 2016).

It is important to systematically understand the association between quality of social support and symptom severity in individuals with psychosis. Supportive relationships can facilitate recovery for individuals with psychosis (Brekke, Key, Lee & Green, 2005), with social support found to be an important determinant of the severity of symptoms (Huang, Sousa, Tsai and Hwang, 2008). Indeed, the extent of social support has been considered as a protective factor in reducing the severity of psychiatric symptoms (Lambert & Naber, 2004). Yanos, Roe, Markus & Lysaker, (2015) suggested that symptoms of psychosis can become more severe and disabling depending on the extent of the social isolation of an individual following an episode of psychosis. Interventions that focus of social support are thus likely to be beneficial, indeed a randomised controlled trial investigating impact of peer support groups for people living with psychosis concluded that those in a support group reported less negative symptoms of psychosis (Dennis, 2013).

Extending beyond the measurable and structural components of social networks, the term social support consolidates the characteristics of satisfactory relationships into either practical/instrumental support or emotional support (Alloway & Bebbington, 1987). The evidence base has indicated that individuals with a history of psychosis often engage in social withdrawal, emphasising particularly, feelings of not being understood by those in their social network (Sandhu, Ives, Birchwood & Upthegrove, 2013). Thus, the presence of psychotic disorders can lead to a lessening of social support, with the shrinking of social support networks consequently increasing the risk of relapse (Harris, Brown and Robinson, 1999).

Lim and Gleeson (2014) reported that an increase in the experience of loneliness is correlated with an increase in the potential threat to an individual's psychological

health. As a psychotic illness progresses, it is important to understand the interaction of psychotic symptoms with reference to changes in individual perceptions of and satisfaction with, available social support (Morin, Dhir, Mitchell & Jones, 2017).

Epitomised by the varying measures they have used for social support, researchers have struggled to reach a consensus on a consistent definition of social support. Effectively the construct has been defined individually in each study through the measurement methods selected (Heitzmann & Kaplan, 1988).

As there is evidence that low social support has an impact on outcomes in psychosis, in particular on symptom severity, this study will address the association between lower quality of social support and increased symptom severity; that those with inadequate social support have a heightened risk of continued symptoms of psychosis. The probability of relapse with continued symptoms appears to be substantial without adequate social support. Inadequate social support is common for those who suffer from a psychotic disorder, (Buchanan, 1994).

To-date systematic reviews of the social support networks around individuals with a history of psychosis have focused on their size rather than their quality. This systematic review aims to bridge this gap by reviewing all published data on the quality, rather than the quantity, of the social networks of individuals who experience psychosis to elucidate whether this has an impact on symptom severity in psychosis.

Method

Search strategy and selection criteria

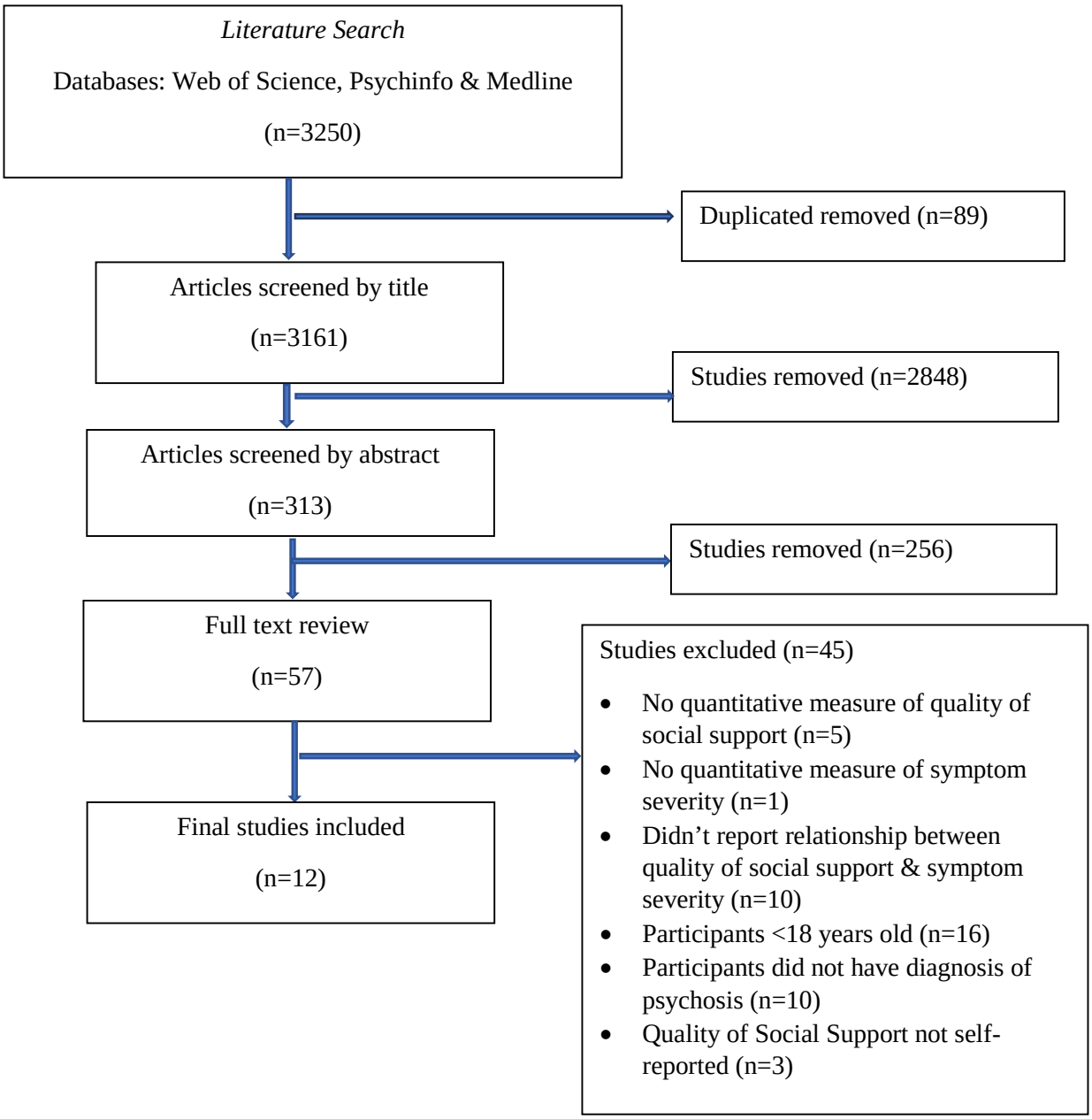
The protocol for this review is registered and published with Prospero: http://www.crd.york.ac.uk/PROSPERO/display_record.php?ID=CRD42018080539. The literature search was conducted using three online databases: PsychINFO, Web of Science and PubMed. The search strategy was limited to full text studies published in English. The search strategy was made up of the following keywords: (a) terms identifying a potential psychosis variable: psychotic or schizo* or psychosis or "delusional disorder"; (b) terms identifying social support: "social relation*" or "friendship interaction" or "social interaction" or "peer support" or "social support". To ensure articles containing one word from group (a) and one from group (b) were identified, the two groups were combined using the word "AND".

For inclusion, the studies were required to meet the following criteria: (a) original research articles, published in peer-reviewed journals; (b) full text articles available in English; (c) studies whose participants were aged 18 years old or above; (d) clearly stated standardised diagnostic system for a psychotic disorder were used; (e) self-reported quantitative measures of quality of social support were used; (f) quantitative measure of symptom severity were reported and (g) the association between quality of social support and symptom severity was either made explicit in the study or where this was not explicit, the study was included if the authors, when contacted, provided this information.

Study Selection

As recommended in the Prisma statement, a review of the literature was performed (Moher, Liberati, Tetzlaff and Altman, 2009). A total of 3250 studies were found during the database search, of which 12 were ultimately included (figure 1). The references list of these articles was examined but this did not lead to any further articles being included. Kappa was used to determine the level of agreement between the two reviewers. There was complete agreement for the inclusion of all 12 studies.

Figure 1. Flowchart showing the review process



Quality Assessment

To date, there is no exemplar quality assessment tool (National Health and Medical Research Council, 2000). Based on the proforma created by Kmet, Lee, and Cook (2004) (Appendix A), a single quantitative quality assessment checklist was applied to each of the studies. To improve reliability, each article was assessed for quality by two independent reviewers. This framework appeared to be the most appropriate as the criteria were found to demonstrate good inter-rater reliability with by-item agreement ranging from 73% to 100% (Kmet et al, 2004). As they are applicable to studies assessing interventions, criteria 5, 6 and 7 were removed from the quality assessment tool. The total possible range of scores was 0-22 as can be seen in Table 1. Higher quality scores were obtained in studies that (i) used measures of greater validity and reliability and (ii) used larger, more representative samples.

Table 1: Study Characteristics Table

Author(s), Year & Country of Origin	**Study Design**	**Sample Size**	**Participant Diagnosis**	**Setting**	**Quantitative Measure of Quality of Social Support**	**Quantitative Measure of Symptom Severity**	**Key Findings including statistics**	**Quality Score (/22)**
Cresswell, Kuipers & Power, (1992) (UK)	Cross-sectional	40	Schizophrenia	Day Rehab-ilitation Unit	Significant Others Scale (Power, Champion, & Aris, 1988).	Brief Psychiatric Rating Scale (BPRS) (Overall & Gorham, 1988) Scale for Assessment of Negative Symptoms (Andreasen, 1984)	Negative significant relationship between quality of social support and severity of negative symptoms. *r = -0.33; p < .005.*	20/22

Author(s), Year & Country of Origin	Study Design	Sample Size	Participant Diagnosis	Setting	Quantitative Measure of Quality of Social Support	Quantitative Measure of Symptom Severity	Key Findings including statistics	Quality Score (/22)
Patterson et al, (1997) (USA)	Cross-sectional	70	Psychosis	University research study	Emotional support scale (Pearlin, Mullan, Semple & Skaff, 1990)	The scales for assessment of positive & negative symptoms (SAPS & SANS) (Andreasen and Olsen, 1982; Andreasen, 1982)	Negative significant relationship between quality of social support and severity of negative symptoms. *r = -0.25; p < .005.*	20/22
Bechdolf et al, (2003) (Germany)	Cross-sectional	66	Schizophrenia	Post-acute	Psychosocial quality of life subscale of the Modular System for Quality of Life (MSQol,	Positive & negative syndrome scale (PANSS) (Kay 1987)	Negative significant relationship between quality of social support and severity of negative symptoms. *r = -0.29; p < .005.*	21/22

Author(s), Year & Country of Origin	Study Design	Sample Size	Participant Diagnosis	Setting	Quantitative Measure of Quality of Social Support	Quantitative Measure of Symptom Severity	Key Findings including statistics	Quality Score (/22)
					Pukrop, Moller & Steinmeyer, 2000)			
Solanki, Singh, Midha & Chugh, (2008) (India)	Cross-sectional	50	Schizophrenia	Outpatient	Social relationship subscale of World Health Organisation Quality of Life Schedule Brief (WHO QOL-BREF) (WHOQOL, 1998)	PANSS	Significant negative relationship between quality of social support and severity of positive symptoms, *r = -0.30; p < .005.* Significant negative relationship between quality of social support and overall general symptom severity. *r = -0.42; p< .001.*	19/22

Author(s), Year & Country of Origin	Study Design	Sample Size	Participant Diagnosis	Setting	Quantitative Measure of Quality of Social Support	Quantitative Measure of Symptom Severity	Key Findings including statistics	Quality Score (/22)
Uzenoff et al, (2010) (USA)	Cross-sectional	41	Schizophrenia	Outpatient	Multi-dimensional scale of perceived social support (MSPSS) (Zimet Dahlem, Zimet & Farley, 1988)	PANSS	Significant negative relationship between quality of social support and severity of positive symptoms. *r = -0.48; p < .001.* Significant negative relationship between quality of social support and general symptom severity. *r = -0.49; p < .001.* Significant negative relationship between quality of social support and total symptom severity. *r = -0.52; p < .001.*	19/22
Roe, Mashiach-Eizenberg, &	Cross-sectional	159	Schizophrenia or Schizo-	Rehab-ilitation	MSPSS	Brief Psychiatric Rating Scale Expanded (BPRS-	No significant relationship between quality of social support and symptom severity was reported.	20/22

Author(s), Year & Country of Origin	Study Design	Sample Size	Participant Diagnosis	Setting	Quantitative Measure of Quality of Social Support	Quantitative Measure of Symptom Severity	Key Findings including statistics	Quality Score (/22)
Lysaker, (2011) (Israel)			Affective Disorder	Residential centre		E) (Burger, Calsyn, Morse, Klinkenberg, & Trusty (1997).		
Xiang et al, (2012) (China)	Cross-sectional	540	Schizophrenia	Outpatient	WHO QOL-BREF	Positive & Negative Syndrome Scale – Chinese Verson (He & Zhang, 1997)	Significant negative relationship between quality of social support and severity of positive symptoms. *r = -0.16; p < .001.* Significant negative relationship between quality of social support and severity of negative symptoms. *r = -0.16; p < .001.* Significant negative relationship between quality of social support and severity of general symptoms.	20/22

Author(s), Year & Country of Origin	Study Design	Sample Size	Participant Diagnosis	Setting	Quantitative Measure of Quality of Social Support	Quantitative Measure of Symptom Severity	Key Findings including statistics	Quality Score (/22)
							r = -0.16; p < .001.	
Adelufosi, Ogunwale, Abayomi, Mosanya, (2013) (Nigeria)	Cross-sectional	313	Schizophrenia	Outpatient	WHO QOL–BREF	BPRS	Significant negative relationship between quality of social support and symptom severity. *r = -0.24; p < .001.*	21/22
Chugh, Rehan, Unni, & Sah, (2013) (India)	Prospecti-ve	52	Schizophrenia	Outpatient	WHO QOL–BREF	PANSS	No significant relationship between quality of social support and symptom severity was reported.	21/22
Hamaideh, Al-Magaireh, Abu-Farsakh, & Al-Omari, (2014) (Jordan)	Cross-sectional	160	Schizophrenia	Outpatient	WHO QOL – BREF MSPSS	BPRS	Significant negative relationship between quality of social support and severity of positive symptoms. *r = -0.29; p < .001.*	21/22

Author(s), Year & Country of Origin	Study Design	Sample Size	Participant Diagnosis	Setting	Quantitative Measure of Quality of Social Support	Quantitative Measure of Symptom Severity	Key Findings including statistics	Quality Score (/22)
							Significant negative relationship between quality of social support and severity of negative symptoms. *r = -0.28; p < .001.* Significant negative relationship between quality of social support and severity of affective symptoms. *r = -0.24; p < .001.*	
Thomas, Muralidharan, Medoff, & Drapalski, (2016) (USA)	Cross-sectional	250	Psychotic Disorder	Outpatient	Social support questionnaire (Sarason, Levine, Basham, & Sarason, 1983)	Brief Symptom Inventory (BSI) (Derogatis, 1993)	Significant negative relationship between quality of social support and symptom severity. *r = -0.21; p < .001.*	20/22

Author(s), Year & Country of Origin	Study Design	Sample Size	Participant Diagnosis	Setting	Quantitative Measure of Quality of Social Support	Quantitative Measure of Symptom Severity	Key Findings including statistics	Quality Score (/22)
Munikanan et al, (2017) (Malaysia)	Cross-sectional	160	Schizophrenia	Outpatient	WHO QOL – BREF MSPSS	BPRS	No significant relationship between quality of social support and symptom severity was reported.	20/22

Results

Summary of Results of Included Studies

For the studies included in this review, Table 1 provides summary information on (i) sample sizes, (ii) quantitative measures of quality of social support and symptom severity used and (iii) setting and location of each study.

Adelufosi et al, (2013), Hamaideh et al, (2014), and Munikanan et al, (2017) reported data on the relationship between the WHO QOL-BREF social relationship subscale and the Brief Psychiatric Rating Scale (BPRS) (Overall and Gorham, 1962). Adelufosi et al, (2013) found symptom severity was significantly negatively correlated with the social relationship subscale of WHO QOL-BREF. Using multiple linear regression analysis (Adelufosi et al, 2013) also found symptom severity was a significant predictor of quality of social support as indicated by the social relationship subscale of WHO QOL-BREF. Hamideh et al, (2014) found a significant negative relationship between the social relationship subscale of WHO QOL BREF and all categories of symptoms of psychosis as indicated by the BPRS. However, an accompanying multiple regression analysis (Hamideh et al, 2014) indicated that symptom severity was not a predictor of quality of social support as shown by the WHO QOL-BREF social relationship subscale. Lastly Munikanan et al, (2017) found no significant correlation between symptom severity, as specified by BPRS and the social domain of WHO QOL-BREF, however, using multiple regression analysis, Munikanan et al (2017) found that lower BPRS total score was a predictor of a greater rating of the social relationship domain of WHO QOL-BREF.

Three studies (Solanki et al, 2008, Chugh et al, (2013 and Xiang et al, 2012) reported data on the relationship between the social relationship subscale of the WHO QOL

BREF and the Positive and Negative Syndrome Scale (PANSS) (Kay, 1987). Solanki et al, (2008) reported a significant negative correlation between scores on positive PANSS subscale, total PANSS, general psychopathology and the social relationship domain of WHO QOL-BREF. Xiang et al, (2012) found a significant correlation between PANSS positive, PANSS negative, PANSS general and the social relationship subscale of WHO QOL-BREF; indicative of more social support reducing symptom severity on psychosis. In contradiction, Chugh et al, (2013), did not find a significant correlation between PANSS and the social relationship domain of WHO QOL-BREF. Multiple regression analyses that examined symptom severity as a predictor of the social relationship domain of WHO QOL-BREF produced conflicting outcomes; Xiang et al, (2012) reported finding no relationship between symptom severity and quality of social support whereas Chugh et al, (2013) reported the social relationship subscale of WHO QOL-BREF measure was related significantly to general psychopathology symptoms as measured by the PANSS. However, Chugh et al, (2013) found neither positive or negative symptoms influenced the social relationship facet of WHO QOL-BREF.

Uzenoff et al, (2010) using the Positive and Negative Syndrome Scale (PANSS) reported significant negative correlations between MPSS and scores for positive PANSS, general PANSS and total PANSS.

Roe et al, (2011) using the Brief Psychiatric Rating Scale-Expanded (BPRS-E) to measure symptom severity, reported no significant relationship between symptom severity and social support.

Cresswell et al, (1992) administered the Significant Others Scale (Power et al, 1988), the BPRS and the Scale for Assessment of Negative Symptoms (Andreasen, 1984). Cresswell et al, (1992) found that BPRS ratings were not significantly correlated with

ratings of perceived social support from significant relationships; however, there was a significant correlation between negative symptoms and lower ideal, but not actual, perceived support. Patterson et al, (1997), utilised an Emotional Support Scale devised by Pearlin et al, (1990) to assess quality of social support and both Scales for Assessment of Positive (SAPS) and Negative Symptoms (SANS) (Andreasen and Olsen, 1982; Andreasen, 1982) to measure psychosis symptom severity. Patterson et al's (1997) results showed psychiatric symptoms exhibited a strong inverse relationship with emotional social support together with a significant negative correlation between psychosis symptom severity, as indicated by SANS score, and quality of social support as indicated by the Emotional Support Scale.

Possible relationships between the psychosocial quality of life subscale of the Modular System for Quality of Life (MSQoL; Pukrop et al, 2000) and PANSS scores for general psychopathology symptoms (Kay, 1987) was studied by Bechdolf et al, (2003). They found a significant correlation between negative syndrome of the PANSS and psychosocial quality-of-life.

The relationship between the quality of social support given by the Social Support Questionnaire (SSQ) (Sarason, Levine, Basham and Sarason, 1983) and symptoms of psychosis as measured using the Brief Symptom Inventory (BSI) (Derogatis, 1993) was investigated by Thomas et al. (2016). Their results indicated that satisfaction with social support correlated significantly with psychiatric symptom severity. Mediation analysis by Thomas et al. (2016) showed that satisfaction with social support remained negatively associated with symptoms when self-efficacy was included, although the magnitude of relationships reduced, suggesting partial mediation.

Narrative Synthesis of Results

The findings of the included studies predominately found an association between quality of social support and symptom severity with higher reported symptom severity being related to lower levels of social support.

Of the three studies examining the association between the social relationship subscale of WHO QOL-BREF and BPRS (Adelufosi et al, 2013, Hamaideh et al, 2014, Munikanan et al, 2017), two (Adelufosi et al, 2013 & Hamaideh et al, 2014) evidenced an association between quality of social support and symptom severity; as symptom severity increased the self-reported quality of social support decreased. Although Munikanan et al, (2017) did not also make this finding, both Munikanan et al, (2017) and Adelufosi et al, (2013) found symptom severity to be a predictor of quality of social support. In contrast the work by Hamaideh et al, (2014) did not support these findings. Overall, these findings suggest an association between social relationship subscale of the WHO QOL-BREF and general psychopathology symptoms as indicated by PANSS. Significant regressions reported by Adelufosi et al, (2013) and Munikanan et al, (2017) may be explained by their exclusive focus on participants who had attended the clinic for at least six months prior to the study whereas Hamaideh et al, (2014) did not specify the length of time each participant had been known to services. Hamaideh et al, (2014) and Munikanan et al, (2017) had a small sample size of 160 in comparison to 313 in the sample of Adelufosi et al, (2013). Therefore, differences in sample characteristics may explain the variance between their findings.

Solanki et al, (2008) and Xiang et al, (2012) both found evidence for an association between quality of social support and symptom severity; as symptom severity increases, the self-reported quality of social support decreases. Chugh et al, (2013), who used the same quantitative measures as Solanki et al, (2008) and Xiang et al,

(2012), did not find an association between quality of social support and symptom severity. Findings from multiple regressions were also mixed; Xiang et al, (2012) found no relationship between the two variables whereas, Chugh et al, (2013) found that symptom severity was a significant predictor of self-reported quality of social support. These findings need to be seen in the context of the studies; Chugh et al, (2013) recruited individuals with clinically stable first episode psychosis who completed questionnaires twice, initially at their participation commencement and then did so again after six months. Both Solanki et al, (2008) and Xiang et al, (2012) used an alternative approach that recruited participants with a minimum duration of illness of two years who completed the questionnaires at only one point in time. Additionally, there were differences in sample sizes; Solanki et al, (2008) and Chugh et al, (2013) had relatively small sample sizes, at 50 and 52 participants respectively. In marked contrast, with a sample of 540 participants, Xiang et al, (2012) did not find evidence to support the outcome of Chugh et al's (2013) study that symptom severity is a predictor of quality of social support.

The analytical procedures used differed between studies, in particular in the determination of whether social support was a predictor of symptom severity. Both Chugh et al, (2013) and Xiang et al, (2012) conducted regression analyses to assess this association, whereas Solanki et al, (2008) did not conduct a regression analysis. In their investigation of the clinical and demographic determinants of quality of life, if Solanki et al, (2008) had expanded their results to include regression analyses, it could be speculated that would have provided greater insight from their findings.

A number of studies included in this review used the social relationship subscale of WHO QOL-BREF. However, the validity of using the WHO QOL-BREF with this clinical population has been questioned by Solanki et al, (2008) who recognised that

the use of this generic instrument is a limit of the validity of the research as it is not specifically designed to measure the quality of life of individuals with psychosis. This is an important consideration when discussing the findings of the studies.

Two studies examined the association between quality of social support and symptom severity using the MSPSS but used differing measures of symptom severity with conflicting results. Considering the association between quality of social support and symptom severity; Uzenoff et al, (2010) found evidence supporting that lower quality of social support was associated with greater symptom severity but Roe et al, (2011) did not find the same association. An explanation for this discrepancy could be the different measures of symptom severity used in addition to the differing methodologies and sample characteristics; Uzenoff et al, (2010) focused on individuals with first-episode psychosis having received treatment for under three years and enrolled in a randomised controlled trail. In comparison Roe et al, (2011) used a large sample size of 159 participants, recruited from supported housing, however did not report the length of treatment. Although Uzenoff et al, (2010) used a non-clinical control group in their research, the findings reported for the control group are not discussed in this review, as the group, comprised an unrepresentative sample of college students.

Cresswell et al, (1992), Patterson et al, (1997), Bechdolf et al, (2013), Thomas et al, (2016) found evidence for an association between quality of social support and symptom severity using different questionnaires. Collectively these results suggest that lower quality of social support is associated with increased symptoms of psychosis. In terms of specific symptoms, the results also suggest that as negative symptoms of psychosis increase, self-reported quality of social support lowers (Cresswell et al, 1992, Patterson et al, 1997 and Bechdolf et al, 2013). A direct and specific relationship between symptom severity and quality of social support was also

suggested as significant findings remained after controlling for self-efficacy (Thomas et al, 2016). Although results for the relationship between a measure of quality of social support and a measure of symptom severity were largely consistent, the results must be viewed cognisant of their differing contexts and characteristics. Sample size varied from a relatively small sample of 40 participants (Cresswell et al, 1992) to a large sample of 250 participants studied by Thomas et al (2016). Bechdolf et al, (2013) only assessed individuals who had experienced an acute psychotic episode within the preceding six months whereas Patterson et al, (1997) only included individuals over the age of 45, noting this as a limitation of representativeness.

Discussion

Research dating back to 1976 (Cassel, 1976) documented the need for social support to reduce the impact of mental health difficulties and subsequently research has emerged attempting to explain why this is the case. It is important to note that social relationships are multifaceted and therefore there are numerous ways in which social relationships and thus social support may impact on an individual's overall well-being (Thoits, 2011). The findings of the current review largely indicate a direct predominant directionality that lower quality of social support is associated with increased symptom severity. This supports previous literature that poor social support may contribute to negative outcomes in psychosis, as individuals who were satisfied with their social support had a shorter remission, with fewer symptoms, whereas those individuals who had low satisfaction with their social support had more severe symptoms of psychosis (Sündermann, Onwumere, Bebbington, & Kuipers, 2013).

To help explain these findings it is important to discuss them in terms of theoretical models and current literature in order to understand and hypothesise the underlying mechanisms. Firstly, the Brown-Harris psychosocial model (Brown & Harris, 1978)

suggests that access to social support may contribute to an individual's protective personal resources, as it promotes resilience and a sense of belonging. Therefore, the findings of this review would suggest that having available supportive resources available may provide protective mechanisms that reduce symptoms of psychosis. Secondly, theorists have suggested that social control may be one way in which an individual's social support may impact on mental health outcomes (Umberson and Montez, 2010). It has been suggested that having a social support network who promote positive health behaviours may encourage the individual to also engage in similarly positive behaviours. This theory may provide one explanation for the findings of this review; that the presence of a supportive social network that encourages behaviours which are beneficial to the individual's mental health may reduce an individual's symptoms of psychosis (Thoits, 2011)

A further explanation is that individuals who have experienced psychosis may have less social support due to experiencing shame, loss of social rank and a perceived shift in the attitudes of both friends and family; the latter characterised by less understanding together with more irritation at the change in the participant's presentation (Sandhu et al, 2013). Related to the latter research is the concept of "mattering", defined as believing by an individual that they are thought of by, and important and significant to, another person (Rosenberg & McCullough, 1981). Therefore, it is hypothesised that losing a sense of "mattering" would have a detrimental effect on an individual's well-being. In terms of the current studies' findings, the overall consensus that lower quality of social support is related to greater symptom severity could be explained by a loss of feeling significant-to or mattering-to others.

A possible explanation to the current review findings that negative symptoms associated with psychosis, such as anxiety, guilt and tension (Hamaideh et al, 2017) may result in self-reported lower quality of social support has been suggested by Cresswell et al (1992). Based on their findings that individuals with increased levels of negative symptoms preferred less emotional and practical support, Cresswell et al (1992) posited that reduced social support may serve as a defensive function. They suggested that those with more negative symptoms were significantly less likely to attempt to seek support; being significantly more likely to claim not to want support in the event of stress, possibly as a protective factor against excessive engagement in stressful relationships. Cresswell et al (10092) also found perceived support from significant relationships to be high, indicating that support from one or two close relationships can compensate for lack of wider additional support. These findings were supported by Caron, Mercier, Diaz & Martin, (2005) who suggested that having symptoms associated with psychosis may lead individuals to gradually withdraw from social activities.

Clinical implications

As this review suggests that lower quality of social support is associated with increased symptom severity, it is important for mental health services to recognise and monitor the social risk factors that may impact on the experience of symptoms for individuals with psychosis. A detailed assessment of an individual's quality of social support is recommended as part of an individuals' routine assessment carried out upon first presentation to services. This would allow identification of those individuals most at risk of social risk factors such as social isolation and withdrawal, which, as this study suggests, may result in heightened symptoms associated with psychosis. This review

also indicates the need to work systemically with this population to ensure adequate social support is available.

Limitations

This review has highlighted certain limitations in the literature that need to be taken into consideration.

Capturing social support

Capturing and measuring quality of social support is considered challenging and it is plausible that quantitative measures used may not capture components of social support that are most salient for individuals with psychosis. Capturing and measuring social support presents many definitional and methodological challenges, therefore it is plausible that the search terms employed in this review to capture the concept of social support may not fully encompass all its dimensions.

Self-reporting

As the quality of social support was collected through self-report measures, self-report bias must be considered. The underlying assumption is that individuals with psychosis could give a valid account of their quality of social support. As this review did not consider data from other sources, the data gathered may have been compromised by respondents either over-estimating or under-estimating their social contacts, calling into question the reliability of the studies. Additionally, symptom severity was measured by both self-report and clinician reported measures therefore it is important to consider how the subjective nature of this may have impacted on results.

Survey design and sample size.

This review included one prospective study (Chugh et al, 2013). The cross-sectional design of the remaining studies cannot address the cause-effect relationships between quality of social support and symptom severity so therefore preclude any conclusions regarding causal relationship between them. The small sample size of various studies (Uzenoff et al, 2010, Solanki et al, 2008, Cresswell et al, 1992, Patterson et al, 1992 and Bechdolf et al, 2003), in addition to differing sample characteristics with regards to current functioning and socio-demographics questions the overall generalisability of the results to other settings and their overall representativeness.

The variability between studies.

All the studies reported aspects of the relationship between quality of social support and symptom severity. However, as the studies had differing aims, several studies did not include both quality of social support and symptom severity in their complete statistical analysis (Uzenoff et al, 2010). Several studies examined the association between either quality of social support or symptom severity and various outcomes (Chugh et al, 2013, Munikanan et al, 2017, Hamaideh et al, 2014, Cresswell et al, 1992, Patterson et al, 1997, Bechdolf et al, 2003 and Thomas et al, 2016). Both Munikanan et al, (2017) and Hamaideh et al, (2014) used the MSPSS but neither reported the relationship between the MSPSS and the symptom severity measure. A further study by Xiang et al, (2012) used the social support index as a measure of quality of social support but did not present the association of the social support index with symptom severity. As different studies considered non-transferable social support outcomes, it is a limitation that inconsistent measures for quality of social support and symptom severity do not enable full analysis of cross-study interrelationships.

Rigour and scope of studies reviewed

There are limitations to the present review. The studies included in this review were published in a peer review journal. Though they were thus assessed as being of high quality by several reviewers, those reviewers themselves may have been, to some extent, influenced by confirmation bias. The omission of a systematic evaluation of secondary "grey" literature may also introduce a partiality to the literature included.

Differences in countries and cultures

Three of the studies examined were conducted in the USA (Patterson et al, 1997; Uzenoff et al, 2010; Thomas, Muralidharan, Medoff, & Drapalski, 2016) and two in India (Solanki, Singh, Midha & Chugh, 2008; Chugh, Rehan, Unni, & Sah, 2013). The other studies were each in the UK (Cresswell, Kuipers & Power, 1992), Germany (Bechdolf et al, 2003), Israel (Roe, Mashiach-Eizenberg, & Lysaker, 2011), China (Xiang et al, 2012), Nigeria (Adelufosi, Ogunwale, Abayomi, Mosanya, 2013), Jordan (Hamaideh, Al-Magaireh, Abu-Farsakh, & Al-Omari, 2014) and Malaysia (Munikanan et al, 2017). Tacit to all these studies there may be inherent cultural assumptions that may link with different forms of social organisation. These may introduce unknown biases. Conducting further analysis that could take cultural differences into account has not been undertaken as this is fraught with further implicit assumptions arising from the cultural context of the author of this work.

Range of Diagnoses

Typically, individuals who receive the same mental health diagnosis are grouped together for research purposes, for example individuals with a diagnosis of a psychotic disorder. However, a limitation is that such grouping fails to take into consideration the wide variation of symptoms that people experience, even though they have

received the same diagnosis. Therefore, grouping people together based solely on clinical diagnosis can limit our understanding of and about the diagnosis in question. This may be a limitation of the current research as it does not consider all the possible varying characteristics of the various diagnoses used.

Furthermore, the current research required studies to have used a clearly-stated standardised diagnostic system for a psychotic disorder, therefore using multiple diagnostic systems is a limitation to the current study. Clark, Cuthbert, Lewis-Fernandez, Narrow and Reed (2017) showed that different diagnostic systems have different histories, purposes and constituencies. Therefore, individuals with mental illness often meet criteria for multiple diagnosis across different diagnostic systems. This may question whether the studies included in this review are a true representation of the population in question as different diagnostic systems may produce a differing diagnosis.

Recommendations for Future Research

There are clear recommendations future research that arise from this review. Measures of quality of social support need to reflect the complexity of the social world of individuals with psychosis, taking into consideration their unique social profile. There is also a need to focus on individuals in separate stages of recovery. From the literature, other factors such as coping styles, personality and internalised stigma and their association with symptom severity should be considered in future research (Adelufosi et al, 2013). The inclusion of more prospective studies would be helpful to understand how the association between quality of social support and symptom severity changes over time. Greater consistency in methodology and the use of the same measurement for quality of social support and symptom severity is recommended.

Conclusion

To the best of our knowledge, this review paper is the first consideration of all the literature reporting the use of quantitative measures to explore the association between quality of social support and symptom severity in individuals with psychosis. In reviewing the twelve studies considered, the results indicated relatively consistent findings, that quality of social support is associated with symptom severity in individuals with psychosis, with lower quality of social support associated with increased symptom severity.

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Appendix A Quality Assessment Tool

Criteria		Yes (2)	Partial (1)	No (0)	N/A
1.	Question / objective sufficiently described?				
2.	Study design evident and appropriate?				
3.	Method of subject/comparison group selection or source of Information/input variables described and appropriate?				
4.	Subject (and comparison group, if applicable) characteristics sufficiently described?				
5.	If interventional and random allocation was possible, was it described?				
6.	If interventional and blinding of investigators was possible, was it reported?				
7.	If interventional and blinding of subjects was possible, was it reported?				
8.	Outcome and (if applicable) exposure measure(s) well defined and robust to measurement / misclassification bias? Means of assessment reported?				
9.	Sample size appropriate?				
10	Analytic methods described/justified and appropriate?				
11	Some estimate of variance is reported for the main results?				
12	Controlled for confounding?				
13	Results reported in sufficient detail?				
14	Conclusions supported by the results?				

= Questions 5-7 exclude

Appendix B: Explanation of Key Statistics in Study Characteristics Table

The purpose of this appendix is to explain what figures are presented in table 1, the study characteristics table, what they represent and how they can be interpreted.

In the table, under the heading "key findings including statistics", it is stated whether or not the study in question reported a relationship between quality of social support and symptom severity in individuals with psychosis. Where a relationship was found, the correlation coefficient *r* is reported to indicate the strength and direction of the relationship between the two variables in each study where a relationship was found. The *r* values can be interpreted as follows:

Value	**Interpretation**
-1.0	Exact negative relationship
-0.70	Strong negative relationship
-0.50	Moderate negative relationship
-0.30	Weak negative relationship
0	No relationship
+0.30	Weak positive relationship
+0.50	Moderate positive relationship
+0.70	Strong positive relationship
+1.0	Exact positive relationship

In addition to the correlation coefficient, where a relationship was found between quality of social support and symptom severity, the *p value* is reported. This value determines whether the correlations between quality of social support and symptom severity are significant. *P values* equal to or lower that 0.05 ($p<0.05$) indicate a

significant relationship between quality of social support and symptom severity. *P values* of below 0.05 suggest that the probability of finding a correlation where there isn't one is 5%.

Exploring Childhood Trauma and Social Capital as Predictors of Depression in Individuals with Psychosis

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Abstract

The exploration of depression in psychosis is essential due to the potential impact on the individual. Childhood trauma and social capital, comprised of measures of social support and neighbourhood cohesion, were explored as predictors of depression in individuals with psychosis. Using a cross-sectional design, 52 participants were recruited from mental health services in Northern Ireland. The Childhood Trauma Questionnaire, Multidimensional Scale of Perceived Social Support, Neighbourhood Cohesion Scale and the Beck Depression Inventory were administered. Whilst childhood trauma, specifically emotional abuse was predictive of depression in individuals with psychosis, the remaining subscales along with social capital were not associated with depression. These findings suggest a relationship between emotional abuse in childhood and depression in individuals with psychosis and are discussed in relation to attachment theory. Clinical implications, including the need for routine assessment of childhood trauma are highlighted along with limitations of the current study and recommendations for future research.

Key Words: Psychosis, Social Support, Childhood Trauma

Word Count: 5949

Exploring Childhood Trauma and Social Capital as Predictors of Depression in Individuals with Psychosis

Introduction

Depression and Psychosis

Up to 75% of individuals experience depression after an episode of psychosis (Upthegrove et al, 2010). The experience of depression has been associated with high relapse rates, suicide, social isolation (Challis, Nielssen, Harris & Large, 2013) together with increased likelihood of positive symptoms such as delusions and hallucinations (Upthegrove, Ross, Brunet, McCollum & Jones, 2014). However, the underlying relationship of psychosis with depression remains poorly understood (Cotton et al, 2012) as depression is often seen as secondary to other symptoms of psychosis; resulting in missed diagnosis and the absence of treatment (Rothschild, 2013). To understand the links between depression and psychosis, it is important to draw on two separate theoretical stances; firstly, that depression and psychosis are fundamentally linked with evidence suggesting that psychotic experiences are associated with symptoms of depression (Johnson, Cohen, Kasen & Brook, 2005). Varghese et al, (2011) examined the association between symptoms of psychosis with a diagnosis of depression or an anxiety disorder. They found that symptoms of psychosis such as hallucinations and delusions are not limited to those with a psychotic disorder but that individuals with major depression are likely to report symptoms of psychosis. Furthermore, a systematic review exploring the influence of depression on psychotic symptoms concluded that depression is not only associated with the severity of symptoms but is also linked to the development of symptoms of psychosis and long-term prognosis and recovery (Hartley, Barrowclough and Haddock, 2013). Based on this research it is plausible that depression is intrinsically linked to psychosis. To

understand the link, Kuipers et al, (2006) drew upon the cognitive model of psychosis (Gariety, Kuipers, Fowler, Freeman & Bebbington, 2001) which theorised that an individual's appraisal of experiences can lead to symptoms of psychosis. Their appraisal of the experience of psychosis impacts on their self-esteem which is in turn linked to depression (Birchwood, 2003). Secondly, depression has been viewed as a post-psychotic reaction to psychosis; Sonmez, Romm, Andreasssen, Melle & Rossberg, (2013) found that depression is frequent following the onset of psychosis, especially in the first year. Evidence suggests that depression can occur due to a negative appraisal of psychosis as shameful (Birchwood et al, 2006). Individuals who have experienced psychosis may experience public prejudice and consequently internalise such negative attitudes, often leading to self-stigma and depression (Brohan, Elgie, Sartorius & Thornicroft, 2010). As depression in psychosis is therefore a major phenomenon, it is essential to further develop our understanding.

Social Capital and Depression in Psychosis

"Social capital" describes the quality and quantity of networks, norms and levels-of-trust in social interactions and institutions (McKenzie, Whitley & Weich, 2002; Putnam, 1996). Social capital includes individual and community elements of social support together with their availability, accessibility, and value (Hawkins and Maurer, 2010).

Individuals who experienced social withdrawal and isolation following an episode of psychosis exhibit higher rates of depression (Sandhu, Ives, Birchwood & Upthegrove, 2013) whereas those satisfied with their social and emotional support had shorter remissions with fewer symptoms of psychosis and depression (Sundermann, Onwumere, Kane, Morgan & Kuipers, 2014). One way to explain the link between

social support and symptoms of psychosis is to draw upon the Brown-Harris psychosocial model (Brown & Harris, 1978). This model posits that access to social capital may contribute to individual protective personal resources. Supporting this, Ehsan and De Silva, (2015) found that decreased levels of trust and engagement in the community, low satisfaction with social support, loneliness and absence of secure relationships were significantly associated with symptoms of depression within psychosis.

Individual personal reflection on an episode of psychosis has reportedly led to feelings of shame and loss of social rank (Birchwood, Iqbal, Chadwick, & Trower, 2000). This, together with friends and family misunderstanding changes in the individual's presentation, this may contribute to symptoms of depression in psychosis (Sandhu et al, 2013). Indeed, the Schizophrenia Commission, (2012) reported that 87% of individuals with symptoms of psychosis had experienced public stigma and discrimination.

Previous attempts to define social capital for concrete and tangible translation into an operational measure suited to quantitative analysis have been criticized as social capital comprises constructs that require subjective interpretation (Grootaert, Van Bastelaer & Bank, 2002). The Organisation for Economic Co-operation and Development's framework of social capital has four aspects; personal relationships, social network support, civic engagement and trust and cooperative norms (OECD, Scrivens and Smith, 2013a). In this study social capital will be measured by capturing self-reported individual levels of perceived social support and neighbourhood cohesion.

Childhood Trauma and Depression in Psychosis

Many people with psychosis report traumatic childhood experiences including physical or sexual abuse or neglect (Norman, Byambaa, Butchart, Scott, & Vos, 2012). Prevalence rates of childhood trauma in psychosis between 59% and 100% have been found (Read, Van Os, Morrison & Ross 2005) with recent studies suggesting that the experience of childhood trauma predicts the onset of psychosis among high-risk individuals (Mayo et al, 2017). The experience of trauma can impact on the course and outcome of psychosis; with those exposed to childhood trauma reporting more severe positive symptoms of psychosis and suicidality (Ucok & Bikmaz, 2007). Childhood maltreatment may influence the onset and course of major depression in adulthood (Bernet and Stein, 1999). Bilgi et al, (2017) found that individuals with childhood trauma had earlier onset psychosis, poorer social function and worse mental and physical health. This evidence encourages speculation that symptoms of psychosis may emerge as a reaction to childhood trauma. Gallagher and Jones, (2013) found that childhood neglect is correlated with negative symptoms of psychosis while Bebbington, Jonas, Kuipers & King (2011) found a relationship between childhood sexual abuse and positive symptoms of psychosis. To understand why this ensues, models of psychosis suggest that experiencing childhood trauma may render an individual susceptible to negative emotional reactions to life's routine hassles due to an enhanced stress sensitivity and threat anticipation (Howes & Murray, 2014). Supporting this theory, Reininghaus et al, (2016) found that individuals with history of childhood sexual abuse and psychosis had an elevated sensitivity to stress and threat anticipation.

Current Study

As depression is associated with poorer outcomes in psychosis, previous research invites speculation that this may be due to, at least partially, inadequate social capital. Given that childhood trauma has been implicated repeatedly in the course and outcome of psychosis, the research evidence presented leads to a hypothesis that social capital and/or childhood trauma may increase the likelihood of symptoms of depression in individuals with psychosis.

The paucity of research to-date into this specific combination of predictors of outcomes in psychosis belies its importance. Establishing the validity of such links would indicate pathways by which depression occurs in psychosis. Research can also provide valuable information to make appropriate therapeutic interventions in psychosis that could address social capital, childhood trauma and depression.

This study aims to be the first to investigate whether childhood trauma, measured by the Childhood Trauma Questionnaire (CTQ) (Bernstein et al, 2003) and social capital, comprising social support, measured by the Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet, Dahlem, Zimet & Farley, 1988) and neighbourhood cohesion, measured by the Neighbourhood Cohesion Scale (NCS) (Buckner, 1988) will predict depression measured by the Beck Depression Inventory (BDI) (Beck, Ward, Mendelson, Mock & Erbaugh, 1961) in individuals with psychosis. We hypothesise that among individuals with a psychotic disorder:

1. Social support (MSPSS) will predict depression (BDI)
2. Neighbourhood cohesion (NCS) will predict depression (BDI)
3. Childhood trauma (CTQ) will predict depression (BDI)

Method

Design

This is a quantitative study with a cross-sectional design. Trauma measures are retrospective with those of depression and social capital measures pertaining to current presentation.

Participants

This study used convenience sampling. Participants were recruited across two Health and Social Care Trusts in Northern Ireland. Both males and females aged 18-70 years old, with a DSM-V diagnosis by a Consultant Psychiatrist of a psychotic disorder (schizophrenia, schizoaffective disorder, schizophreniform disorder, psychosis not otherwise specified, first-episode psychosis, delusional disorder, depression with psychotic features, and bipolar disorder with psychotic features) were considered for inclusion in the study. Individuals with a history of a traumatic brain injury, with a neurodegenerative disorder or in contact with an Intellectual Disability Service were not considered for participation. Individuals who met eligibility criteria were identified by a member of their Clinical Mental Health Team and informed about the study through the Participant Information Sheet (Appendix A). Written informed consent (Appendix B) was obtained from each participant. Full ethical approval for the current study was granted by Queen's University Belfast and a statutory Research Ethics Committee (Appendices J, K and L).

A total of 52 participants took part with full consent. Participants were 37 (71.2%) males and 15 (28.8%) females of average age 42.3 years (SD 12.89). Full socio-demographic details are presented in Table 1.

Measures

Childhood Trauma Questionnaire-Short Form (CTQ-SF) (Bernstein et al, 2003) (Appendix C)

The 28-item CTQ-SF scale enquires about five types of maltreatment: emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect. The CTQ-SF has demonstrated satisfactory internal consistency, test-retest reliability and construct validity (Bernstein et al., 2003; Fink, Bernstein, Handelsman, Foote, & Lovejoy, 1995). Referring to ethical considerations, negative effects have not been shown from participating in research related to past traumatic experiences (Cunningham et al., 2016; DePrince & Freyd, 2004; Legerski & Bunnell, 2010; Newman & Kaloupek, 2004); indeed, such involvement can benefit participants (Becker-Blease & Freyd, 2006).

Mulitdimensional Scale of Perceived Social Support (MSPSS) (Zimet et al, 1988) (Appendix D)

This questionnaire examines three dimensions of social support: family, friends and significant-other. Responses range from “very strongly agree” to “very strongly disagree” on a 7-point Likert scale. The MSPSS has been found to have good internal and test-retest reliability with strong validity (Winefield, Winefield, & Tiggemann, 1992; Zimet, Dahlem, Zimet, & Farley, 1988).

The Neighbourhood Cohesion Scale (Buckner, 1988) (Appendix E)

This 15-item measure, adapted by Fone et al, (2007), aims to capture a sense of community, attraction to neighbourhood and social interaction within a neighbourhood with two subscales, social cohesion and belonging. Responses range from “strongly

agree" to "strongly disagree" on a 5-point scale. For the "Social Cohesion" subscale, total scores range from 8-40 and for the "Belonging" subscale, total scores range from 7-35. Higher scores indicate a greater sense of neighbourhood cohesion and belonging. It has good evidence for validity and reliability (Fone et al, 2007).

Beck Depression Inventory (BDI) (Beck et al, 1961) (Appendix F)

The 21-item BDI self-report measure assesses the severity of depression. It has demonstrated satisfactory internal consistency, test-retest reliability and construct validity (Beck & Steer, 1984).

Procedure

All potential participants were provided with information about the study by a member of their Clinical Mental Health Team. Participants gave full informed consent prior to completing questionnaires. The battery of questionnaires was completed during an interview with a research team member. At the end of the study each participant received a debriefing (Appendix C) that provided the study rationale and aims, e-mail addresses of primary researchers and a support services listing for anyone who required further support.

Analysis

The following statistical analyses were conducted using the Statistical Package for Social Sciences Version 25.

1. Multiple linear regression analyses were employed to understand the relationship between the independent variables; childhood trauma, measured

by the CTQ, and social capital, measured by the MSPSS and NCS and the dependent/predictor variable, depression, measured by the BDI. Multiple linear regression analysis was chosen as it is a predictive analysis used to explain the relationship between one continuous dependent variable and two or more independent variables. As the purpose of this study was to identify whether childhood trauma and/or social capital predicts depression in individuals with psychosis, multiple linear regression analysis was the appropriate choice of analysis.

2. T-tests were conducted to identify any differences between the subgroup of individuals who self-reported a diagnosis of "depression with psychotic features" (n = 6) and the remaining sample (n = 46) on all variables. A t-test was deemed the most appropriate as it establishes whether there is a difference between the two samples and how the significant the differences are. This analysis was chosen to determine whether the individuals with "depression with psychotic features" could have had an effect on the overall findings of the study.
3. A second multiple linear regression analysis was carried out with the subgroup of individuals with "depression with psychotic features" removed from the overall sample. The variables entered into the model were the independent variables, namely; childhood trauma, measured by the CTQ, and social capital, measured by the MSPSS and NCS and the dependent/predictor variable, depression, measured by the BDI. This analysis was used to identify whether childhood trauma and/or social capital predicts depression in individuals with psychosis with the subgroup of individuals with "depression with psychotic

features" removed to determine if they had an overall impact on the original multiple linear regression model.

Regression assumptions were checked for linearity, outliers, normal distribution and multicollinearity. All assumptions were deemed to be satisfactory (Appendix M).

Results

Socio-demographic information about the participants is provided in Table 1. The total sample comprised 37 (71.2%) males and 15 (28.8%) females with a mean age of 42.3 years (SD 12.89). Most of the sample were single (n=42, 80.8%) and unemployed, (n=47, 90.4%). Over half the total sample (n=26, 55%) had been diagnosed with schizophrenia.

Table 1: Socio-Demographic Information Regarding Study Sample (N=52)

		Participants (N=52)	
		Mean	SD
Age:		42.33	12.89
		N	%
Gender:	Male	37	71.2%
	Female	15	28.8%
Diagnosis:	Schizophrenia	26	55%
	Paranoid Schizophrenia	11	21.2%
	Depression with Psychotic Features	6	11.5%
	Bipolar Disorder with Psychotic Features	5	9.6%
	Schizoaffective Disorder	4	7.7%
Marital Status:	Single	42	80.8%
	Divorced	3	5.8%
	Married	2	3.8%
	Separated	3	5.8%
	In a Relationship	2	3.8%
Educational Level:	GCSEs	27	51.9%
	A Levels	6	11.5%
	Technical College	10	19.2%
	Undergraduate	6	11.5%
	Postgraduate	3	5.8%
Employment Status:	Unemployed	47	90.4%
	Employed	3	5.8%
	Retired	1	1.9%
	Student	1	1.9%

Descriptive statistics for the measures used are shown in Tables 2, 3 and 4. Acceptable internal consistency measured by Cronbach's alpha existed for all scales with the sole exception of "physical neglect" that generated a Cronbach alpha value slightly below 0.7 on the Childhood Trauma Questionnaire.

Prevalence of Childhood Trauma

Table 2: Descriptive Statistics for CTQ

Subscale	*Classification*				*Cronbach's Alpha*
	None	Low	Moderate	Severe	
Emotional Abuse	23 44.2%)	13 (25%)	7 (13.5%)	9 (17.3%)	.90
Physical Abuse	34 (65.4%)	3 (5.8%)	4 (7.7%)	11 (21.2%)	.93
Sexual Abuse	38 (73.1%)	1 (1.9%)	3 (5.8%)	10 (19.2%)	.98
Emotional Neglect	28 (53.8%)	12 (23.1%)	7 (13.5%)	5 (9.6%)	.88
Physical Neglect	25 (48.1%)	8 (15.4%)	13 (25%)	6 (11.5%)	.68

Table 2 highlights that many participants did not self-report any category of childhood trauma. Of those who did self-report childhood trauma, the largest number (n = 13, 25%) reported moderate physical neglect. The next largest number (n = 12, 23.1%) reported low levels of emotional neglect followed by a slightly smaller number (n = 11, 21.2%) who reported severe physical abuse.

Prevalence of Depression

Table 3: Descriptive Statistics for BDI

BDI Classification	*n*	*Percentage*	*Cronbach's Alpha*
			0.95
Minimal	23	45.1%	
Mild	5	9.8%	
Moderate	10	19.6%	
Severe	13	25.5%	
Total	52	100%	

Twenty-three (45.1%) participants were within the minimal range for depression followed by thirteen (25.5%) participants within the severe range, five participants (9.8%) within the mild range and 10 (19.6%) within the moderate range.

Social support and Neighbourhood Cohesion

Table 4: Descriptive Statistics for MSPSS and NCS

Social Capital (MSPSS & NCS)

	Subscale	Mean	SD	Range	Subscale	Low	Moderate	High	Cronbach's Alpha
MSPSS		5.04	1.33	1-7	*Significant Other*	3 (5.8%)	18 (34.6%)	31(59.6%)	.89
					Family	7 (13.5%)	14 (26.9%)	31 (59.6%)	.90
					Friends	7 (13.5%)	22 (42.3%)	23 (44.2%)	.94
NCS	*Social Cohesion*	28.78	5.95	16-39					.78
	Belonging	27.27	5.87	12-35					.84

A majority (n = 31, 59.6%) of participants self-reported high levels of social support from significant others and family. Seven (13.5%) participants reported low social support from family and friends while three (5.8%) reported low social support from significant others.

On the NCS "Social Cohesion" subscale, participants' scores ranged from 16 to 39, out of a possible 40, with a mean of 28.78. For the "Belonging" subscale scores ranged from 12-35, out of a possible 35, with mean of 27.27.

Regression Analysis 1

Pearson correlation co-efficients were investigated to not only identify any relationships between the variables but also the strength and direction of the relationship (Table 5). All variables were found to be significantly associated with depression (BDI) except for age, NCS social cohesion and NCS belonging. Multiple linear regression was then employed to determine the predictors of depression in individuals with psychosis. A model was conducted using the subscales of each

questionnaire. The results of the model are presented in table 6. This was a statistically significant model (F (12,37) = 4.87, p < .001) indicating these results were unlikely to have arisen by chance. The adjusted R^2 indicated that 48.7 per cent of the variance in depression can be explained by variances in the predictor variables. The analysis suggested that emotional abuse (β = .41) was the most influential predictor and age (β = -0.26) was the least influential predictor in the model. Gender (t = 2.58, p = .001), age (t = -2.15, p = .004) and emotional abuse (t = 2.28, p = .003) were shown to be statistically significant predictors of depression. The results suggested that in individuals with psychosis, female gender and younger age were independently associated with higher levels of depression. The remaining variables were not statistically significant predictors of depression.

Table 5: Correlations (r) Between Predictor Variables and Depression

	1.	*2.*	*3.*	*4.*	*5.*	*6.*	*7.*	*8.*	*9.*	*10.*	*11.*	*12.*	*13.*
1.BDI Total	-	.35*	-.20	.65**	.60**	.38**	.41**	.48**	-.34*	-.45**	-.45**	-.26	-.15
2.Gender	.35*	-	.28*	.36**	.25	.50**	.13	.08	-.01	-.11	-.22	.00	.21
3.Age	-.20	.28*	-	-.05	-.10	.00	-.21	-.12	.14	-.01	.13	.01	.26
4.Emotional Abuse	.65**	.36**	-.05	-	.68**	.59**	.41**	.55**	-.20	-.54**	-.46**	-.12	-.17
5.Physical Abuse	.60**	.25	-.10	.68**	-	.38**	.45**	.62**	-.09	-.50**	-.43**	-.15	-.09
6.Sexual Abuse	.38**	.50**	.00	.59**	.38**	-	.09	.33*	.00	-.20	-.35*	-.07	-.01
7.Emotional Neglect	.41**	.13	-.21	.41**	.45**	.09	-	.61**	-.45**	-.58**	-.27	-.24	-.12
8.Physical Neglect	.48**	.08	-.12	.55**	.62**	.33*	.61**	-	-.26	-.59**	-.36**	-.07	-.10
9.MSPSS Significant Other	-.34*	-.01	.14	-.20	-.09	.00	-.45**	-.26	-	.54**	.39**	.37**	.30*
10.MSPSS Family	-.45**	-.11	-.01	-.54**	-.50**	-.20	-.58**	-.59**	.54**	-	.41**	.28*	.21
11.MSPSS Friends	-.45**	-.22	.13	-.46**	-.43**	-.35*	-.27	-.36**	.39**	.41**	-	.37**	.29*
12.NCS Social Cohesion	-.26	.00	.01	-.12	-.15	-.07	-.24	-.07	.37**	.28*	.37**	-	.62**
13.NCS Belonging	-.15	.21	.26	-.17	-.09	-.01	-.12	-.10	.30*	.21	.29*	.62**	-

**Correlation is significant at the 0.05 level (2-tailed)*
***Correlation is significant at the 0.01 level (2-tailed)*

Table 6: Regression Model with Depression as the Criterion Variable

	Unstandardised Coefficients	*Standardised Coefficients*	*t*	*Sig*
Constant	20.45			
Gender	12.47	0.37	2.58	0.01
Age	-0.31	-0.26	-2.15	0.04
CTQ Emotional Abuse	5.35	0.41	2.28	0.03
CTQ Physical Abuse	1.05	0.89	0.51	0.62
CTQ Sexual Abuse	-2.32	-0.19	-1.24	0.22
CTQ Emotional Neglect	-0.44	-0.03	-0.17	0.86
CTQ Physical Neglect	3.04	0.22	1.29	0.21
MSPSS Significant Other	-0.97	-0.04	-0.25	0.80
MSPSS Family	-0.76	-0.04	-0.23	0.82
MSPSS Friends	0.35	0.02	0.12	0.90
NCS Social Cohesion	-0.55	-0.21	-1.45	0.16
NCS Belonging	0.23	0.09	0.60	0.55

Regression Analysis 2

This study aimed to identify whether social capital and/or childhood trauma predicted depression in individuals with psychosis. Under the DSM-IV category of psychosis, "depression with psychotic features" is one clinical diagnosis. As depression was the dependent variable being measured by the BDI, the analysis presented below was conducted to ascertain whether there were any differences between those with "depression with psychotic features" and the other forms of psychosis. Furthermore, regression analysis were carried out when this subgroup of people with "depression with psychotic features" were removed to identify whether their inclusion had an overall impact on the results.

T-tests were conducted to identify any differences between the subgroup of the total sample who self-reported diagnosis of "depression with psychotic features" (6 individuals) and the remaining 46 individuals in the sample who presented with other

forms of psychosis. T-tests did not identify any significant differences between the two groups for gender (*t* (50) = -1.21; p = .232), age (*t* (50*) = -.81; p = .424*), depression (*t* (49) = *-1.09; p = 0.218*), emotional abuse (*t* (50) = *-1.06; p = .295*), physical abuse (*t* (50) = *-0.66; p = .513),* sexual abuse (*t* (50) = *-1.71; p = .094),* emotional neglect (*t* (50) = *.31; p = .758*), physical neglect (*t* (50) = *-1.19; p = .241*), MSPSS Significant Other (*t* (50) = *0.16; p = .871*), MSPSS Family (*t* (50*) = 1.06; p = .295*), MSPSS Friends (*t* (50) = *-0.09; p = .925*), NCS Social Cohesion (*t* (49) = *-0.90; p = .375*), NCS Belonging (*t* (49) = *-.54; p = .591).*

Multiple linear regression analysis was carried out with the subgroup of individuals with "depression with psychotic features" removed from the overall sample. The model remained significant (F (12, 31) = 3.75, $p < .005$). The adjusted R^2 indicated that 38.5 per cent of the variance in depression can be explained by variances in the predictor variables. Gender, age and emotional abuse were statistically significant predictors of depression.

In comparison to the first multiple linear regression model, in which the subgroup of individuals with "depression with psychotic features" were included, the adjusted R^2 indicated that 48.7 per cent of the variance in depression can be explained by variances in the predictor variables. When this subgroup of individuals were removed, the adjusted R^2 then suggested that 38.5 per cent of the variance in depression can be explained by variances in the predictor variables. This suggests that individuals diagnosed with "depression with psychotic features" had an impact on the overall results. Gender, age and emotional abuse were statistically significant predictors of depression when the subgroup of individuals with "depression with psychotic features" were both included and excluded from the analysis.

Discussion

This study explored whether childhood trauma and social capital, (comprised of social support and neighbourhood cohesion) predicted depression in individuals with psychosis. Regarding depression itself, almost half of this sample (45.1%) fell within the minimal range for depression and 25.5% fell within the severe range. Regarding childhood trauma, while most participants within this sample did not report any childhood trauma, 25% of the sample self-reported experiencing physical neglect and emotional abuse. Though there are inherent difficulties in obtaining precise estimates of the prevalence of childhood trauma (Saunders and Adams, 2014) that make direct comparisons uncertain, the 25% reported here is at the lower range of reported rates of childhood trauma in Europe and North America that vary from 20% to 60% of the general population (Wyatt, 1985; Macmillan, Fleming, Trocme, Boyle & Wong, 1997; Scher, Forde, McQuaid & Stein, 2004; Hussey, Chang & Kotch, 2006; National Centre for Mental Health Promotion and Youth Violence Prevention, 2012).

With respect to the social aspects of the study, over half (59.6%) of this sample, self-reported high levels of social support from a significant other and family. Regarding neighbourhood cohesion, mean scores indicated participants self-reported feeling a sense of belonging and social cohesion to their neighbourhood.

Regression analysis revealed that significant predictors of depression in individuals with psychosis were (i) gender, specifically females, (ii) age, namely younger participants and (iii) emotional abuse. This supports previous research that not only is there an association between childhood trauma and depression in psychosis but also the relationship between females and depression in psychosis. Van Nierop et al, (2015), through regression analyses, found that childhood trauma increases the

likelihood of a mixture of affective, anxiety and psychotic symptoms that cross diagnostic boundaries. This study also found that females who had a diagnosis of psychosis were more likely to self-report higher levels of depression. A study by Mullen, Martin, Anderson, Romans and Herbison, (1992) found that women who had been exposed to any form of childhood abuse were more vulnerable to mental health difficulties, especially depression and anxiety. A systematic review by Norman et al, (2012) suggested a relationship between non-sexual childhood abuse, such as emotional abuse and neglect and a range of mental health disorders including suicidality. Their review emphasised the importance of being aware of the long-term consequences of all types of childhood abuse. The current study results support their findings. Our findings also support pathways by which depression and childhood trauma in psychosis is understood; as our findings suggest that within a sample of individuals with psychosis, depression and childhood trauma were evident, one could theorise that this constitutes further evidence that depression may be intrinsic to psychosis but also that the individuals' experience of childhood trauma may have led to symptoms of psychosis.

The current study recruited individuals with a psychotic disorder. Individuals with "depression with psychotic features" were therefore eligible for participation. There has been a long-lasting debate on whether this is a diagnosis in its own right or whether it should be classified as a severe form of depression (Rothschild, 2013). The key difference between individuals diagnosed with psychosis and those diagnosed with "depression with psychotic features" is that individuals experiencing the latter only experience psychotic features during an episode of major depression whereas those with psychosis tend to experience the associated symptoms without a current mood

disorder. This difference is relevant, as the aim of the current study was to ascertain whether social capital and/or childhood trauma predicts depression in individuals with a diagnosis of psychosis. Individuals with a diagnosis of "depression with psychotic features" were also eligible to take part, which may have had an impact on the overall results, as these individuals may have influenced the results by increasing the prevalence of depression in this sample. However, t-tests indicated there was no differences between those with "depression with psychotic features" and other forms of psychosis. Furthermore, regressions remained significant when these individuals were removed from the analysis.

Although we hypothesized that social capital, measured by social support and neighbourhood cohesion, would be associated with depression in individuals with psychosis, the results did not support this hypothesis. There are several possible explanations for this finding. The range of scores for the NCS indicated a high level of variance between participants' levels of social cohesion and belonging. This suggests that while some participants felt a strong sense of belonging and neighbourhood cohesion, others did not. The current housing situations of the participants could be a possible explanation; participants were recruited from several settings, including inpatient hospitals, residential settings and supported housing in addition to outpatient clinics. Some of the participants may not have felt a sense of community or developed an attachment to such accommodation, as it was provided for them rather than being where they had chosen to live. On the other hand, it is plausible that those participants who currently reside in supported accommodation may gain a greater sense of community and belonging from living with individuals with similar conditions, as previously suggested by Towley & Kloos, (2011). This may

have influenced the variability of responses to the Neighbourhood Cohesion Scale, therefore impacting the results. Although previous literature has suggested that individuals with psychosis tend to perceive their social support as lower than the general population (Gayer-Anderson & Morgan, 2012), the current study found that a high proportion of the sample perceived their social support as high in more than one area. Although this could be explained by the current housing situation of participants, it does suggest that a high proportion of this sample were satisfied with their social support. Although the latter has repeatedly been considered a protective factor against mental health difficulties, research suggests that individuals who experience negative symptoms associated with psychosis prefer less social support, which Cresswell, Kuipers & Power, (1992) suggested may be a protective factor against undue stress that can be associated with social relationships. Therefore, this may have influenced how this questionnaire was answered by the participants who may prefer less social contact by choice and thus may have affected overall results.

Theoretical Implications

This study suggests that emotional abuse was associated with depression in individuals with psychosis. Emotional abuse has been difficult to define and measure (Ackner, Skeate, Patterson and Neal, 2013) however it can be defined broadly as "a repeated pattern of caregiver behaviour or extreme incident(s) that convey to children that they are flawed, unloved, unwanted, endangered, or of value only in meeting another's needs" (American Professional Society on the Abuse of Children, 1995, p.2). This study supports findings that childhood emotional abuse is not only associated with depression (Hamilton et al, 2013) but individuals who have a history of childhood

emotional abuse and psychosis have been found to present with co-morbid depression (Schafer and Fisher, 2011).

Clinical Implications

The present findings have several clinical implications that merit discussion. Although social capital, made up of social support and neighbourhood cohesion, was not a significant predictor of depression in individuals with psychosis, there is evidence to suggest a need for an in-depth assessment to identify those at risk of low social support and to develop and offer psychological interventions, both at an individual and systemic level. Sundermann et al, (2014), found that following an episode of psychosis, individuals who were unsatisfied with their social support had more symptoms of psychosis and were clinically more depressed whereas those with satisfactory relationships or higher perceived emotional support had a shorter remission.

Childhood trauma, specifically emotional abuse was a significant predictor of depression in individuals with psychosis. Despite childhood trauma being repeatedly implicated as a critical predictor of outcomes for individuals, Read, (2006) identified a continued reluctance by professionals to enquire about childhood trauma. The current study further accentuates the need for professionals to routinely enquire about trauma to enable it to be factored into a treatment plan.

Despite the disconcerting evidence that depression can impact on outcomes in psychosis, it remains of secondary importance to other symptoms of psychosis (Rothschild, 2013). The current study found that close to half of the sample self-reported moderate to severe depression. Regarding clinical implications, this

highlights the need for clinicians to routinely enquire about an individual's mood, and if depression is suspected, an appropriate intervention plan should be instituted to minimise the negative outcomes associated with depression in psychosis.

Methodological Limitations and Recommendations for Future Research

This study had methodological limitations that inform recommendations for future research. A major limitation of the study is the relatively small sample size with a power analysis suggesting that the study was underpowered (appendix O). Therefore, the outcome that social capital, measured by MSPSS and NCS was not predictive of depression in individuals with psychosis could be explained by the limited power of the sample size to find such associations. Examining a larger sample size would not only increase the power of the study but also increase its validity. Although not documented, participants were recruited from a range of settings, including inpatient hospitals, outpatient clinics and supported housing. Differences in residential settings may have introduced unknown influences. Recruiting participants from a single residential setting may thus increase both the validity and reliability of the results. Because reliable data was lacking on those who were either not approached by referring clinicians or on those approached who refused to participate, the representativeness of our sample could not be assessed.

Measuring social capital is difficult due to a failure to reach a consensus on a consistent definition of social capital. Therefore, in the absence of a direct measure, proxy indictors are recommended (Collier, 2002). For this study, MSPSS and NCS were used to capture social capital, however with no clear definition or measure of social capital, the methodological difficulties to accurately measure the concept remain.

Furthermore, the questionnaires used were not specific to psychosis so may not capture all components of this population's social world.

As the data was collected through self-report measures, there may be self-report bias. Participants completed the measures during a single research interview which may have led to under-reporting or over-reporting of trauma, depression or social capital. However, for the CTQ, published test–retest reliability coefficients are high, suggesting the trauma history produced from this measure is stable and reliable (Klewchuk et al., 2007).

The cross-sectional design of the current study is unable to address the cause-effect relationships between childhood trauma, social capital and depression in individuals with psychosis. This therefore precludes arriving at any conclusions regarding causal relationships between the variables.

The stage of recovery of each participant was not captured. Recruiting participants at a similar stage of recovery may provide more valid results. This study did not gather information from other sources close to each participant. Including contextual data from friends and family in future research may provide more reliable data than may have been collected from this self-report study.

Conclusion

Trauma in childhood, specifically when associated with emotional abuse, was found to be predictive of depression in individuals with psychosis. Within the sample examined, the remaining subscales and therefore social capital were not found to be

associated with depression. Attachment theory may provide a basis for understanding the relationship between emotional abuse in childhood and depression in individuals with psychosis.

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Participant Information Sheet

How do Early Life Experiences Shape how you live your Life Today?

Thank you for taking the time to read this. You are invited to take part in a research study which is being carried out by Trainee Clinical Psychologists from Queen's University Belfast, as part as an educational qualification. It aims to investigate the links between early life experiences and elements of your personal and social characteristics today.

This information sheet will provide details about the study and what participation would involve if you wish to get involved. Please feel free to discuss this with the healthcare professional who provided this information sheet, or alternatively contact a member of the research team (contact details are included at the end of this document). We would be happy to answer any questions you may have.

What is the purpose of this study?

The study aims to understand the impact of negative life experiences by looking at your personal and social life today.

Do I have to take part?

No. Participation is voluntary and even if you decide to participate, you can withdraw your data from the study without giving a reason. Deciding whether or not to take part in the study will NOT affect the care you receive from your healthcare team or your legal rights.

Why have I been chosen to take part?

You have been invited to participate in this study as you attend acute and recovery mental health services. The researchers are aiming to understand how you handle stressful events and how much support you get from others.

What will participation involve?

If you are interested in taking part in the study, you are asked to complete the "consent to be contacted by researchers" slip provided at the end of this sheet. A member of the research team will then contact you to discuss participation and you will be invited to meet at a local Trust facility when it is convenient for you. If you wish to join the study, we will ask you to sign a consent form. You will then be asked to complete 7 questionnaires, which will ask about different areas of your life, including if you have experienced certain events, and ask you to rate their impact upon your life, your support from others, how you cope day-to-day, your alcohol use and your mood. You will also have the opportunity to discuss your experience of participating in the study. In total, this will take approximately 30 minutes and help with reading or writing can be provided.

What are the possible benefits of participating?

We cannot promise that taking part in the study will have any benefits but some people find it helpful to talk about stressful life events they have experienced.

What are the possible risks of participating?

The questionnaires will ask if you have experienced different types of stressful life events, which may have been upsetting, therefore it is possible that talking about these experiences may be upsetting for you. Support will be provided for you during the interview if you are affected by the research and if you require any further support, you will be able to contact your acute and recovery mental health team. Support is also available from 24hour helplines such as Lifeline (0808 808 8000) or Samaritans (08457 90 90 90).

What will happen to my information?

Data will be anonymous so you will NOT be identifiable by name to anyone except the research team. All information will be treated with respect and confidentiality will be maintained at all times. The research team is duty-bound to share information, which would indicate that someone could be at risk of harm with the relevant professionals or authorities to ensure safety. The researchers are undertaking the study with a view to publishing the findings in an academic journal. All information will remain anonymous and participants will not be identifiable.

What should I do next?

If you are interested in participating or wish to find out more about taking part, please complete the 'consent to be contacted by researchers' slip at the end of this document. You can post this form back to us using the prepaid envelope provided (you do not need a stamp). A member of the research team will then contact you to discuss participation in the study. The researchers will only contact you if you return the slip provided on this form. If you do not wish to take part in the study you do not need to do anything. You will not be contacted about the study again.

Research team details

Parisa Norton
Clinical Psychology Department
Queen's University Belfast
Email: qubresearch@gmail.com

Maebh O'Connor
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Dr Ciaran Shannon
Consultant Clinical Psychologist
Holywell Hospital
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Dr Katrina Hoy
Clinical Psychologist
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Thank you for taking the time to read this information sheet. Please keep this for future reference. Remember that the decision to participate in the research study in yours, and please allow yourself time to make this decision.

✂ - - -

Participant Consent Form

Title of Project: How do Early Life Experiences Shape how you live your Life Today?

Names of Researchers: Parisa Norton, Maebh O'Connor and Ciarán Shannon

Please initial all boxes

1. I confirm that I have received, read and understood the Participant Information Sheet for this study. I am satisfied that the nature and purpose of this study has been adequately explained to me. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. ☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my medical care or legal rights being affected. ☐

3. I understand that the Research Team, representatives from the South Eastern and Northern Health and Social Care Trusts or Regulatory authorities may look at sections of my medical notes and data collected during the study, where it is relevant to my taking part in this research. I give permission for these individuals to have access to my records. ☐

4. I have been informed that the information gained in the study will be used to advance research in this area but that my personal details will remain confidential, with only the research team having access to the information. ☐

5. I agree to take part in the above study. ☐

6. I give consent for my GP to be informed of my participation in this study ☐

Name of Participant	Date	Signature
Name of Person taking consent.	Date	Signature

Participant Debrief Form

Dear Participant,

Thank you very much for taking the time to complete this study.

The purpose of this project is to investigate the links between difficult childhood experiences and elements of your personal and social characteristics today. Your participation will help contribute to our understanding of this area and your generosity and willingness to participate is greatly appreciated.

If any aspect of this study led you to feel distressed or you have any concerns please feel free to contact any member of the research team, whose details are listed below. Furthermore, if you feel that additional support may be required, you can contact your Acute and Recovery Mental Health team. Support is also available from 24hour helplines such as Lifeline (0808 808 8000) or Samaritans (08457 90 90 90).

If you would like any information about the results of the study once it is completed, please contact the research team.

Finally, thank you again for participating in this research,

Kind regards,

Parisa Norton
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Childhood Trauma Questionnaire-Short Form (CTQ-SF) (Bernstein et al, 2003) CTQ Identification_____ Age_____ Sex_____

* Perceived impact: 1 = none; 2 = a little bit; 3 = a moderate amount; 4 = quite a bit; 5 = an extreme amount

When I was growing up…	Never True	Rarely True	Sometimes True	Often True	Very Often True
1. I didn't have enough to eat.	•	•	•	•	•
2. I knew that there was someone to take care of me and protect me.	•	•	•	•	•
3. People in my family called me things like "stupid", "lazy" or "ugly."	•	•	•	•	•
4. My parents were too drunk or high to take care of the family.	•	•	•	•	•
5. There was someone in my family who helped me feel I was important or special.	•	•	•	•	•
6. I had to wear dirty clothes.	•	•	•	•	•
7. I felt loved.	•	•	•	•	•
8. I thought that my parents wished I had never been born.	•	•	•	•	•
9. I got hit so hard by someone in my family that I had to see a doctor or go to hospital.	•	•	•	•	•
10. There was nothing I wanted to change about my family.	•	•	•	•	•
11. People in my family hit me so hard that it left me with bruises or marks.	•	•	•	•	•
12. I was punished with a belt, a board, a cord, or some other hard object.	•	•	•	•	•
13. People in my family looked out for each other.	•	•	•	•	•
14. People in my family said hurtful or insulting things to me.	•	•	•	•	•
15. I believe that I was physically abused.	•	•	•	•	•
16. I had the perfect childhood.	•	•	•	•	•
17. I got hit or beaten so badly that it was noticed by someone like a teacher, neighbour or doctor.	•	•	•	•	•
18. I felt that someone in my family hated me.	•	•	•	•	•
19. People in my family felt close to each other.	•	•	•	•	•
20. Someone tried to touch me in a sexual way, or tried to make me touch them.	•	•	•	•	•
21. Someone threatened to hurt me or tell lies about me unless I did something sexual with them.	•	•	•	•	•
22. I had the best family in the world.	•	•	•	•	•
23. Someone tried to make me do sexual things or watch sexual things.	•	•	•	•	•
24. Someone molested me.	•	•	•	•	•
25. I believe that I was emotionally abused	•	•	•	•	•
26. There was someone to take me to the doctor if I needed it.	•	•	•	•	•
27. I believe that I was sexually abused	•	•	•	•	•
28. My family was a source of strength and support.	•	•	•	•	•

Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet & Farley, 1988)

Instructions: We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.

Circle the "1" if you **Very Strongly Disagree**
Circle the "2" if you **Strongly Disagree**
Circle the "3" if you **Mildly Disagree**
Circle the "4" if you are **Neutral**
Circle the "5" if you **Mildly Agree**
Circle the "6" if you **Strongly Agree**
Circle the "7" if you **Very Strongly Agree**

1.	There is a special person who is around when I am in need.	1	2	3	4	5	6	7	SO
2.	There is a special person with whom I can share my joys and sorrows.	1	2	3	4	5	6	7	SO
3.	My family really tries to help me.	1	2	3	4	5	6	7	Fam
4.	I get the emotional help and support I need from my family.	1	2	3	4	5	6	7	Fam
5.	I have a special person who is a real source of comfort to me.	1	2	3	4	5	6	7	SO
6.	My friends really try to help me.	1	2	3	4	5	6	7	Fri
7.	I can count on my friends when things go wrong.	1	2	3	4	5	6	7	Fri
8.	I can talk about my problems with my family.	1	2	3	4	5	6	7	Fam
9.	I have friends with whom I can share my joys and sorrows.	1	2	3	4	5	6	7	Fri
10.	There is a special person in my life who cares about my feelings.	1	2	3	4	5	6	7	SO
11.	My family is willing to help me make decisions.	1	2	3	4	5	6	7	Fam
12.	I can talk about my problems with my friends.	1	2	3	4	5	6	7	Fri

The items tended to divide into factor groups relating to the source of the social support, namely family (Fam), friends (Fri) or significant other (SO).

The Neighbourhood Cohesion Scale (Buckner, 1988)

	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
Overall, I am attracted to living in this neighbourhood					
I feel like I belong to this neighbourhood					
I visit my friends in their homes					
The friendships and associations I have with other people in my neighbourhood mean a lot to me					
Given the opportunity, I would like to move out of this neighbourhood					
If I need advice about something I could go to someone in my neighbourhood					
I believe my neighbourhoods would help in an emergency					
I borrow things and exchange favours with my neighbours					
I would be willing to work together with others on something to improve my neighbourhood					
I plan to remain a resident of this neighbourhood for a number of years					
I like to think of myself as similar to the people who live in this neighbourhood					
I rarely have a neighbour over to my house to visit					
I regularly stop and talk to people in my neighbourhood					
Living in this neighbourhood gives me a sense of community					
Overall I think this is a good place to bring up children					

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Beck Depression Inventory

CRTN: _____ CRF number: _____

Page 14 patient inits: _____

Baseline

BDI-II

Date:

Name: _____ Marital Status: _____ Age: _____ Sex: _____

Occupation: _____ Education: _____

Instructions: This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and then pick out the **one statement** in each group that best describes the way you have been feeling during the **past two weeks, including today**. Circle the number beside the statement you have picked. If several statements in the group seem to apply equally well, circle the highest number for that group. Be sure that you do not choose more than one statement for any group, including Item 16 (Changes in Sleeping Pattern) or Item 18 (Changes in Appetite).

1. Sadness

0 I do not feel sad.
1 I feel sad much of the time.
2 I am sad all the time.
3 I am so sad or unhappy that I can't stand it.

2. Pessimism

0 I am not discouraged about my future.
1 I feel more discouraged about my future than I used to be.
2 I do not expect things to work out for me.
3 I feel my future is hopeless and will only get worse.

3. Past Failure

0 I do not feel like a failure.
1 I have failed more than I should have.
2 As I look back, I see a lot of failures.
3 I feel I am a total failure as a person.

4. Loss of Pleasure

0 I get as much pleasure as I ever did from the things I enjoy.
1 I don't enjoy things as much as I used to.
2 I get very little pleasure from the things I used to enjoy.
3 I can't get any pleasure from the things I used to enjoy.

5. Guilty Feelings

0 I don't feel particularly guilty.
1 I feel guilty over many things I have done or should have done.
2 I feel quite guilty most of the time.
3 I feel guilty all of the time.

6. Punishment Feelings

0 I don't feel I am being punished.
1 I feel I may be punished.
2 I expect to be punished.
3 I feel I am being punished.

7. Self-Dislike

0 I feel the same about myself as ever.
1 I have lost confidence in myself.
2 I am disappointed in myself.
3 I dislike myself.

8. Self-Criticalness

0 I don't criticize or blame myself more than usual.
1 I am more critical of myself than I used to be.
2 I criticize myself for all of my faults.
3 I blame myself for everything bad that happens.

9. Suicidal Thoughts or Wishes

0 I don't have any thoughts of killing myself.
1 I have thoughts of killing myself, but I would not carry them out.
2 I would like to kill myself.
3 I would kill myself if I had the chance.

10. Crying

0 I don't cry anymore than I used to.
1 I cry more than I used to.
2 I cry over every little thing.
3 I feel like crying, but I can't.

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Subtotal Page 1

Continued on Back

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Beck Depression Inventory

CRTN: _____ CRF number: _____

Page 15

Baseline

patient inits: _____

11. Agitation

0 I am no more restless or wound up than usual.
1 I feel more restless or wound up than usual.
2 I am so restless or agitated that it's hard to stay still.
3 I am so restless or agitated that I have to keep moving or doing something.

12. Loss of Interest

0 I have not lost interest in other people or activities.
1 I am less interested in other people or things than before.
2 I have lost most of my interest in other people or things.
3 It's hard to get interested in anything.

13. Indecisiveness

0 I make decisions about as well as ever.
1 I find it more difficult to make decisions than usual.
2 I have much greater difficulty in making decisions than I used to.
3 I have trouble making any decisions.

14. Worthlessness

0 I do not feel I am worthless.
1 I don't consider myself as worthwhile and useful as I used to.
2 I feel more worthless as compared to other people.
3 I feel utterly worthless.

15. Loss of Energy

0 I have as much energy as ever.
1 I have less energy than I used to have.
2 I don't have enough energy to do very much.
3 I don't have enough energy to do anything.

16. Changes in Sleeping Pattern

0 I have not experienced any change in my sleeping pattern.
1a I sleep somewhat more than usual.
1b I sleep somewhat less than usual.
2a I sleep a lot more than usual.
2b I sleep a lot less than usual.
3a I sleep most of the day.
3b I wake up 1–2 hours early and can't get back to sleep.

17. Irritability

0 I am no more irritable than usual.
1 I am more irritable than usual.
2 I am much more irritable than usual.
3 I am irritable all the time.

18. Changes in Appetite

0 I have not experienced any change in my appetite.
1a My appetite is somewhat less than usual.
1b My appetite is somewhat greater than usual.
2a My appetite is much less than before.
2b My appetite is much greater than usual.
3a I have no appetite at all.
3b I crave food all the time.

19. Concentration Difficulty

0 I can concentrate as well as ever.
1 I can't concentrate as well as usual.
2 It's hard to keep my mind on anything for very long.
3 I find I can't concentrate on anything.

20. Tiredness or Fatigue

0 I am no more tired or fatigued than usual.
1 I get more tired or fatigued more easily than usual.
2 I am too tired or fatigued to do a lot of the things I used to do.
3 I am too tired or fatigued to do most of the things I used to do.

21. Loss of Interest in Sex

0 I have not noticed any recent change in my interest in sex.
1 I am less interested in sex than I used to be.
2 I am much less interested in sex now.
3 I have lost interest in sex completely.

3 4 5 6 7 8 9 10 11 12 A B C D E

_____ Subtotal Page 2
_____ Subtotal Page 1
_____ Total Score

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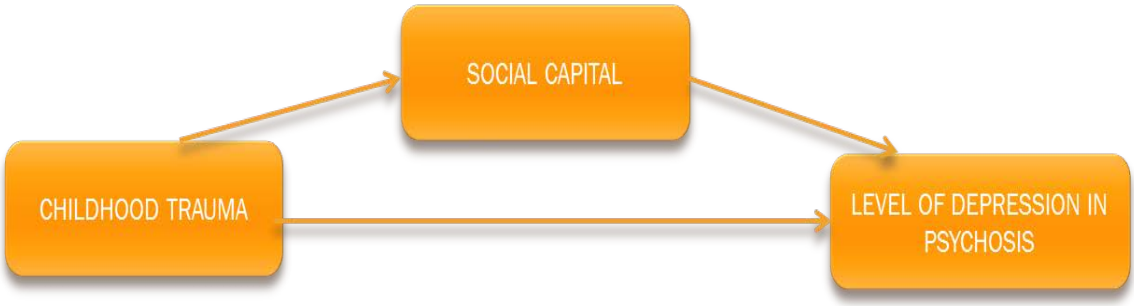
Table 6: Regression model with depression as the criterion variable and total scores of predictor variables

	Unstandardised Coefficients	*Standardised Coefficients*	*T*	*Sig*
Constant	12.72			
Gender	9.01	0.27	2.23	0.03
Age	-0.27	-0.24	-2.27	0.04
CTQ Total Score	0.38	0.48	3.60	0.01
MSPSS Total Score	-1.94	-0.07	-0.60	0.55
NCS Total Score	-0.18	-0.14	-1.23	0.21

A model of mediation analysis, using the Preacher and Hayes (2008) Process SPSS add-on macro was carried out to test the hypotheses that childhood trauma (predictor variable) has a significant effect on levels of depression (criterion variable) and that this effect will be mediated by perceived social capital (mediator variable). The figure below details the mediation model which predicts that social capital (MSPSS & NCS) will mediate the relationship between childhood trauma (CTQ) and depression (BDI) in psychosis.



Regression analysis was used to investigate the hypothesis that social capital, made up of social support and neighbourhood cohesion mediates the relationship between childhood trauma and depression in psychosis. Results indicated that social support was a significant predictor of depression, b = -.45, SE = 1.47, P < .001 and childhood trauma was a predictor of depression in psychosis, b = .65, SE = .09, p < .001. Neighbourhood cohesion was not a predictor of depression in psychosis, b = -.24, SE = .17, p = .092. The results from social support and childhood trauma support the mediational analysis however results from neighbourhood cohesion did not. Therefore, mediational analysis using the PROCESS macro was conducted with social support (MSPSS) as the mediator between childhood trauma (CTQ) and depression (BDI) in psychosis. Results indicated that childhood Trauma was a significant predictor of social Support, b = -.0154, SE = .0038, p < .001, however social support was not a significant predictor of depression (p= .3984). These results do not support the mediational hypothesis.

HSC Business Services Organisation

Office for Research Ethics Committees Northern Ireland (ORECNI)

Customer Care & Performance Directorate
Lissue Industrial Estate West
Rathdown Walk
Moira Road
Lisburn
BT28 2RF
Tel: 028 95361400
www.orecni.hscni.net
HSC REC A

06 January 2017

Dr Ciaran Shannon
Queen's University Belfast
School of Psychology
David Keir Building
Malone Road, Belfast
BT7 1NN

Dear Dr Shannon

Study title: **Childhood Trauma, Alcohol Use and Depression in Psychosis: Exploring the Mediational Roles of Recovery Styles and Social Capital**
REC reference: **16/NI/0259**
IRAS project ID: **216574**

Thank you for Ms Norton's submission of 06 January 2017. I can confirm the REC has received the documents listed below and that these comply with the approval conditions detailed in our letter dated 05 January 2017.

Documents received

The documents received were as follows:

Document	*Version*	*Date*
Participant consent form	3	06 January 2017

Approved documents

The final list of approved documentation for the study is therefore as follows:

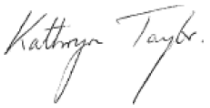
Document	*Version*	*Date*
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only)		18 July 2016
GP/consultant information sheets or letters	1	06 February 2016
IRAS Checklist XML [Checklist_15112016]		15 November 2016
IRAS Checklist XML [Checklist_04012017]		04 January 2017
IRAS Checklist XML [Checklist_06012017]		06 January 2017
Letter from sponsor		10 November 2016
Other [Summary CV for Student]		

Other [Neighbourhood Cohesion Scale]		
Other [Beck Depression Inventory]		
Other [Drinking Motives Questionnaire]		
Other [AUDIT]		
Other [Recovery Styles Questionnaire]		
Other [CM_CV]		
Other [GW_CV]		
Other [KH_CV]		
Other [Participant Debriefing Form]	1	06 February 2016
Participant consent form	3	06 January 2017
Participant information sheet (PIS)	2	19 December 2016
REC Application Form [REC_Form_15112016]		15 November 2016
Referee's report or other scientific critique report		18 July 2016
Referee's report or other scientific critique report		25 July 2016
Research protocol or project proposal	1	06 February 2016
Summary CV for Chief Investigator (CI)		
Summary CV for student		
Summary CV for supervisor (student research)		
Validated questionnaire [Childood Trauma Questionnaire]		
Validated questionnaire [Scale of Perceived Social Support]		

You should ensure that the sponsor has a copy of the final documentation for the study. It is the sponsor's responsibility to ensure that the documentation is made available to R&D offices at all participating sites.

16/NI/0259	**Please quote this number on all correspondence**

Yours sincerely



Kathryn Taylor
Committee Manager HSC REC A
E-mail: RECA@hscni.net

Copy to: *Dr Paula Tighe, Queen's University Belfast*
Ms Frances Johnston, Northern Health & Social Care Trust

Northern Health and Social Care Trust
www.northerntrust.hscni.net

Governance Department

Final Research Governance Permission

5th May 2017

Dr Ciaran Shannon
Consultant Clinical Psychologist
Queens University Belfast
School of Psychology
David Kerr Building
Queens University Belfast
BT7 1NN

Dear Dr Ciaran Shannon

Study Title Childhood Trauma, Alcohol Use and Depression in Psychosis
NHSCT Ref: NT16-0546-12
REC Ref Number: 16/NI/0259
IRAS project ID: 216574

I am pleased to advise that the Northern Health & Social Care Trust has given Final Research Governance Permission for the above project to commence. Permission is granted for the duration of the project to 20 December 2018.

The following documents have been approved for use in the project:

Document	Version	Dated
Research Protocol	Version 1	06/02/2016
Audit (Saunders et al 1993)		
Beck Depression Inventory		
Childhood Trauma Questionnaire Short Form (CTQ-SF) Bernstein et all, 2003		
Debriefing Participant Form	Version 1	06/02/2016
Drinking Motives Questionnaire (DMQ: Cooper et al 1992)		
GP Letter	Version 1	06/02/2016
Recovery Styles Questionnaire (Drayton et al 1998)		
Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet and Farley 1988)		
The Neighbourhood Cohesion Scale (Buckner,1988)		
Participant Consent Form	3.0	06/01/2017
Participant Information Sheet	2.0	19/12/2016
Research/ Panel/Letter (Influence of Childhood Trauma and Social Capital on Depression in Psychosis)		18/07/2016
Research/Panel/Letter MOC (Influence of childhood trauma on recovery styles and alcohol use in psychosis)		25/07/2016

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Document	Version	Dated
REC – Provisional Opinion		16/12/2016
REC – favourable opinion with conditions		05/01/2017
REC – acknowledgement of compliance with approval conditions		06/01/2017
Letter from Queen's University confirming Employers' Liability (01/08/2016-31/07/2016)		18/07/2016
Letter from Queen's University confirming Sponsorship		10/11/2016
CV – Dr Ciaran Shannon		Not dated
GCP – Dr Ciaran Shannon		08/02/2015
CV – Ms Parisa Norton		Not dated
GCP – Ms Parisa Norton		11/10/2016
CV – Miss Maebh O'Connor		Not dated
GCP – Miss Maebh O'Connor		16/10/2016
CV -- Dr Ciaran Mulholland		Not dated
GCP – Dr Ciaran Mulholland		23/03/2015

The following personnel have been approved to work on the study at this Trust:

Name	Indemnity Provided by
Dr Ciaran Shannon	NHSCT
Dr Ciaran Mulholland	NHSCT
Miss Maebh O'Connor	QUB
Ms Parisa Norton	QUB

Permission is granted subject to the attached conditions and I would ask you to please ensure that all members of the research team are familiar with these. Failure to abide by these conditions will invalidate permission and may result in the cessation of the research.

I wish you every success with your project.

Yours sincerely,

Dr Desmond Rooney
Head of NHSCT R&D

CC Dr Ciaran Mulholland, NHSCT
Miss Maebh O'Connor, QUB
Ms Parisa Norton, QUB
Dr Paula Tighe, QUB

Conditions of Permission

Research Governance permission is issued provided the researcher(s) involved adhere to and abide by the conditions below.

- The researcher(s) must adhere strictly to the research protocol.
- There must be no changes to the research protocol or approved study documentation without the prior consent of the Trust, the Research Ethics Committee and, where applicable, the MHRA.
- Researchers must inform the NHSCT R&D Office if an extension to honorary contract is required for the duration of the study.
- There must be no changes in research staff without prior consent of the Trust.
- The Research Office should be informed if the Chief Investigator or Principal Investigator(CI/PI) is unable to continue to fulfil his/her duties as CI/PI for any reason such as long term absence, change in employment etc.
- There must be no increase in the resources required without prior consent of the Trust.
- Researcher(s) must report all untoward incidents and serious adverse events to the Trust.
- Any concerns in relation to the research protocol must be reported to the Trust.
- Researcher(s) must adhere to good research practice principles in line with the ICH Good Clinical Practice (GCP) guidelines.
- Researcher(s) must adhere to the Trust's Research & Development Standard Operating Procedures (available from the Research Office on request)
- On request, researcher(s) must make their research project available to Trust appointed monitors.
- The lead researcher must make an annual report to the Research Office for the duration of the project.
- The lead researcher should inform the Research Office on completion or termination of the project. Completion reports must be sent to the Research Office, Research Ethics Committee and, if applicable, MHRA.

South Eastern Health and Social Care Trust

Dr Ciaran Shannon
Queen's University Belfast
School of Psychology
David Keir Building
Malone Road
Belfast, BT7 1NN

11 MAY 2017

Dear Dr Shannon

Study Title: CHILDHOOD TRAUMA, ALCOHOL USE AND DEPRESSION IN PSYCHOSIS
HSC Trust Ref: SET/16/56
IRAS Ref: 216574

I am pleased to advise that the South Eastern Health and Social Care Trust has given Research Governance Permission for the above project to commence. Permission is granted until 30/09/2018.

The following documents have been approved for use in the project:

Document	Version	Date
GP Letter	1	06/02/2016
Participant debriefing form	1	06/02/2016
Childhood trauma questionnaire	-	-
Scale of perceived social support	-	-
Alcohol audit questionnaire	-	-
Beck depression inventory	-	-
ICF	3	06/01/2017
Drinking motives questionnaire	-	-
PIS	2	19/12/2016
Proposal	1	06/02/2016
Recovery styles questionnaire	-	-
Neighbourhood cohesion scale	-	-

The following personnel have been approved to work on the study at this Trust:

Name	Indemnity Provided by
Katrina Hoy	SEHSCT
Parisa Norton	QUB
Maebh O'Connor	QUB

Permission is granted subject to the attached conditions which I would ask you to please ensure that all members of the research team make themselves familiar. Failure to abide by these conditions will invalidate permission and may result in the cessation of the research.

I wish you every success with your project.
Yours sincerely,

South Eastern Health and Social Care Trust

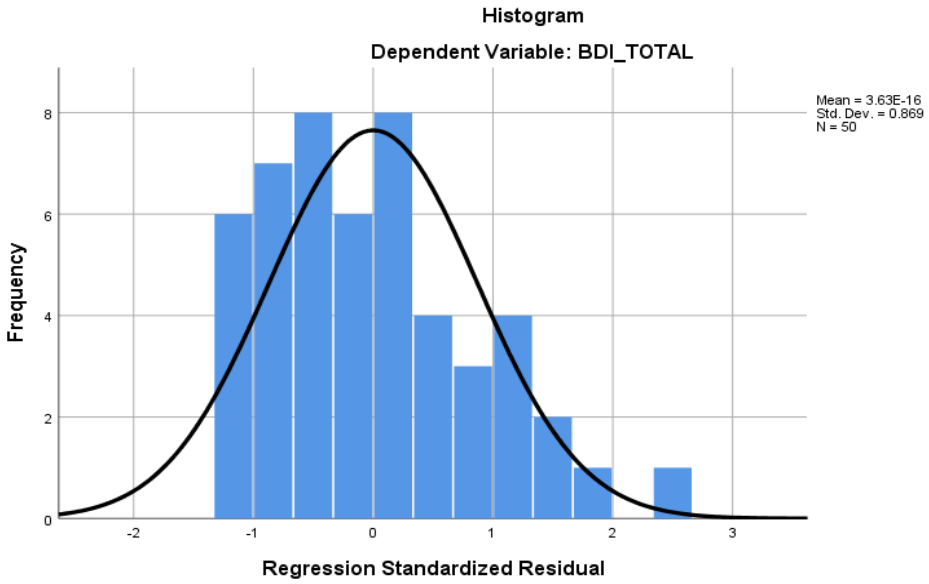
Mr Paul Carlin
Innovation, Research & Development Manager

Copy to: K Hoy, P Norton, M O'Connor

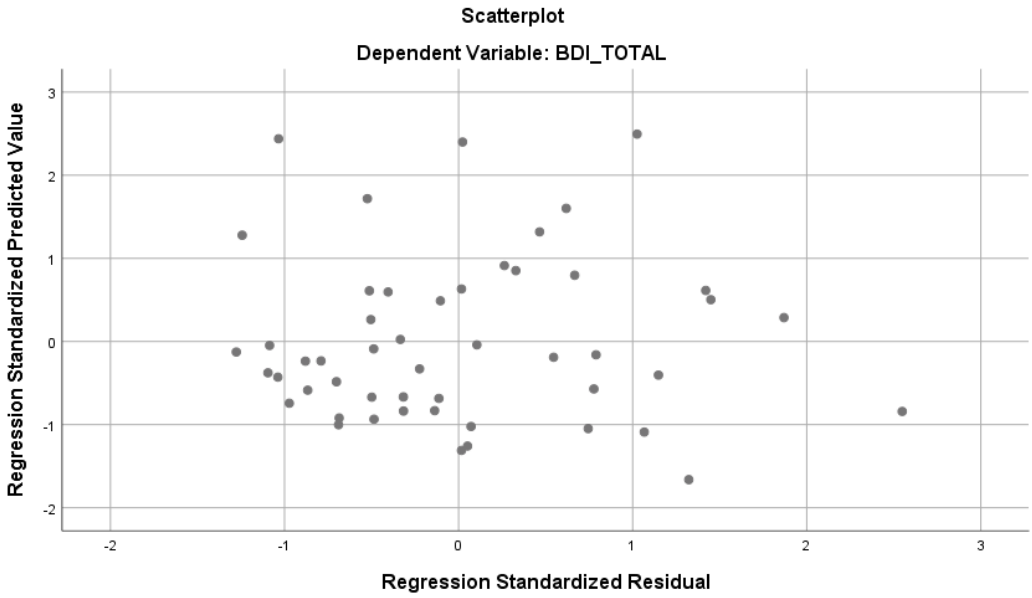
Assumptions of Multiple Linear Regression

1. **Outliers:** an analysis of standard residuals of the data contained no outliers of influence. For the sample, Cook's Distance Min = .00, Cook's Distance Max = .15.
2. **Collinearity:** analysis of the sample to see if the data met the assumption of collinearity indicated that multicollinearity was not a concern. That is for the predictors in the clinical sample, Gender (Tolerance = .499, VIF = 2.00), Age (Tolerance = .693, VIF = 1.44), CTQ Emotional Abuse (Tolerance = .328, VIF = 3.05), CTQ Physical Abuse (Tolerance = .345, VIF = 2.90), CTQ Sexual Abuse (Tolerance = .444, VIF = 2.25), CTQ Emotional Neglect (Tolerance = .402, VIF = 2.49), CTQ Physical Neglect (Tolerance = .353, VIF = 2.84), MSPSS Significant Other (Tolerance = .488, VIF = 2.05), MSPSS Family (Tolerance = .387, VIF = 2.58), MSPSS Friends (Tolerance = .584, VIF = 1.71), NCS Social Cohesion (Tolerance = .504, VIF = 1.99) and NCS Belonging (Tolerance = .489, VIF = 2.05)
3. **Normality, Homoscedasticity and Linearity:** The histogram of standardised residuals indicated that the sample showed that the data contained approximately normally distributed errors. Furthermore, the scatterplots of standardised predicted values showed that the data met the assumptions of homogeneity of variance and linearity.

Graph 1: Histogram of Standardised Residuals for Sample



Graph 2: Scatterplot of Standardised Predicted Value for Sample



This journal was written up according to the guidelines below for the journal "Psychosis":

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Structure

Your paper should be compiled in the following order: title page; abstract; keywords; main text introduction, materials and methods, results, discussion; acknowledgments; declaration of interest statement; references; appendices (as appropriate); table(s) with caption(s) (on individual pages); figures; figure captions (as a list).

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Please include a word count for your paper.

The maximum word length for an Article in this journal is 6000 words (this limit includes tables, references and figure captions).

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The maximum word length for a Brief Report is 1500 words.

The maximum word length for an Opinion Piece is 1500 words.

The maximum word length for Letters to Editor is 400 words.

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Please refer to these quick style guidelines when preparing your paper, rather than any published articles or a sample copy.

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Please use double quotation marks, except where "a quotation is 'within' a quotation". Please note that long quotations should be indented without quotation marks.

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Figures. Figures should be high quality (1200 dpi for line art, 600 dpi for grayscale and 300 dpi for colour, at the correct size). Figures should be supplied in one of our preferred file formats: EPS, PS, JPEG, GIF, or Microsoft Word (DOC or DOCX).

Tables. Tables should present new information rather than duplicating what is in the text. Readers should be able to interpret the table without reference to the text. Please supply editable files.

Equations. If you are submitting your manuscript as a Word document, please ensure that equations are editable.

Units. Please use SI units (non-italicized).

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Tables and figures: Indicate in the text where the tables and figures should appear, for example by inserting [Table 1 near here]. The actual tables should be supplied either at the end of the text or in a separate file. The actual figures should be supplied as separate files. The journal Editor's preference will be detailed in the Instructions for Authors or in the guidance on the submission system. Ensure you have permission to use any tables or figures you are reproducing from another source.

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Power Analysis

Using G Power 3.1.9.2 software, a power calculation was carried out. The following values were entered in the model: a medium effect size of 0.02, based on data reported by Marshall, Shannon, Meenagh, Mc Corry & Mulholland (2018), an alpha level of .05, one dependent variable, namely depression and the sample size of 52. The analysis suggested that the study yielded a power of 0.26, which suggests that the study is under powered.

Reference

Marshall, M., Shannon, C., Meenagh, C., Mc Corry, N., & Mulholland, C. (2018). The association between childhood trauma, parental bonding and depressive symptoms and interpersonal functioning in depression and bipolar disorder. *Irish Journal of Psychological Medicine,* 35, 23-32.

Reflective Appendix

Reflecting on the research component of my clinical training has allowed me to acknowledge my strengths, critical learning points and the challenges I faced.

When faced with certain components of research, specifically statistical analysis, I can acknowledge that there have been times during the last three years I have felt out of my depth and unskilled. Reflecting on this has given me the space to understand and learn from this experience. When these feeling arose, I believe I took the initiative to ask for help and took the opportunity to learn from other, more experienced individuals in the field. I believe I used what could be construed as negative feelings in a positive way to use my initiative and build on my research skills. I believe I can take this forward in my future career to push me to continue to learn and develop, even when I feel out of my depth and unskilled.

Between the conceptualisation and completion of my research project, I experienced the loss of my primary supervisor from the university and my research partner. I found myself faced with the key members of the research team either no longer available or no longer as easily accessible. I can reflect that I found this a significant challenge. Maintaining the same level of motivation was a particular challenge, especially when faced with a small sample size so close to the deadline and eligible participants continually saying no to participating. I found it a challenge to maintain regular contact and keep up the enthusiasm for the research within Mental Health Teams, while also presenting our research and building rapport with new teams and attending clinics to meet with potential participants. In addition, I was also keeping up the demands associated with a third-year placement. Despite these challenges, upon reflection I can acknowledge that this gave me the opportunity to build upon and display key

leadership skills expected of a Clinical Psychologist. To balance these co-occurring demands, I organised my time effectively, made sure I was prepared by having information readily available to teams and used the support from family, friends and the research team to help me maintain a work-life balance. Upon reflection, I believe I have grown both professionally and personally in my ability to effectively communicate with and work within a multi-disciplinary team while also learning from different professionals and consider new ways of working.

I would like to take the opportunity to reflect on the experience of completing the research project with the participants who took part in the research. I found the experience of sitting with the participants eye opening. I found myself in awe of the resilience, strength and openness of those participants who chose to share their stories with me, despite the research interview being questionnaire based. I had not anticipated the impact of this and am very grateful for the experience. I believe this gave me the opportunity to build on my key clinical skills, especially when dealing with issues of risk.

Lastly, I feel the research component of the course has given me the opportunity to utilise my organisational skills to the best of my ability. Due to the challenges I mentioned above, I was required to be extremely organised when it came to recruitment and write-up of both the systematic review and large scale. Due to various setbacks, including slow recruitment and changes in systematic review protocol, I had to effectively organise my time between recruitment and writing up both research projects to a doctorate standard. Although a challenge, I was able to use my organisational skills to manage my time effectively and appropriately.

In conclusion, I believe the experience of research has given me the opportunity to build on my ability to be an autonomous practitioner, show my initiative and handle responsibility when faced with challenges. I have enjoyed being part of this research project; meeting participants from a range of backgrounds, working with professionals from different disciplines and increasing my knowledge of this area of mental health. Overall, I believe I have developed many of the essential skills necessary for my future clinical and research projects.